

PROJECT	DESIGNATION
PB-14-0012	-----
CONTRACT	BRIDGE FILE
-----	HAMILTON CO. BR. #35

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
HAMILTON CO. BRIDGE #35	CONT. COMPOSITE PRESTRESSED CONC. SPREAD BOX BEAM	3 SPANS @ 40'-0", 51'-2" & 40'-0" SKEW; 10° LT.	WILLIAMS CREEK	118+04.50

# HAMILTON COUNTY HIGHWAY DEPARTMENT

## BRIDGE REHABILITATION PLANS

### HAMILTON COUNTY BRIDGE #35 W. 106th STREET OVER WILLIAMS CREEK CLAY TOWNSHIP, HAMILTON COUNTY, INDIANA PB-14-0012



APPROVED BY:  
HAMILTON COUNTY BOARD OF COMMISSIONERS

Date: 3/29/16

Steven C. Dilling  
Steven Dilling President

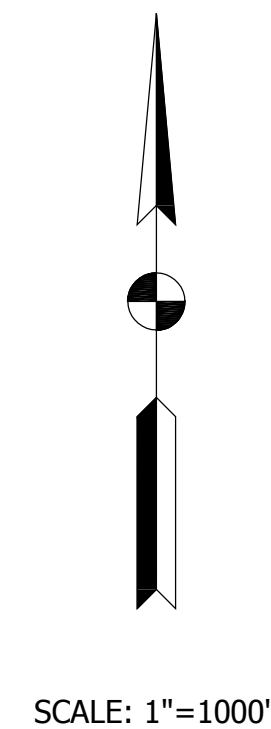
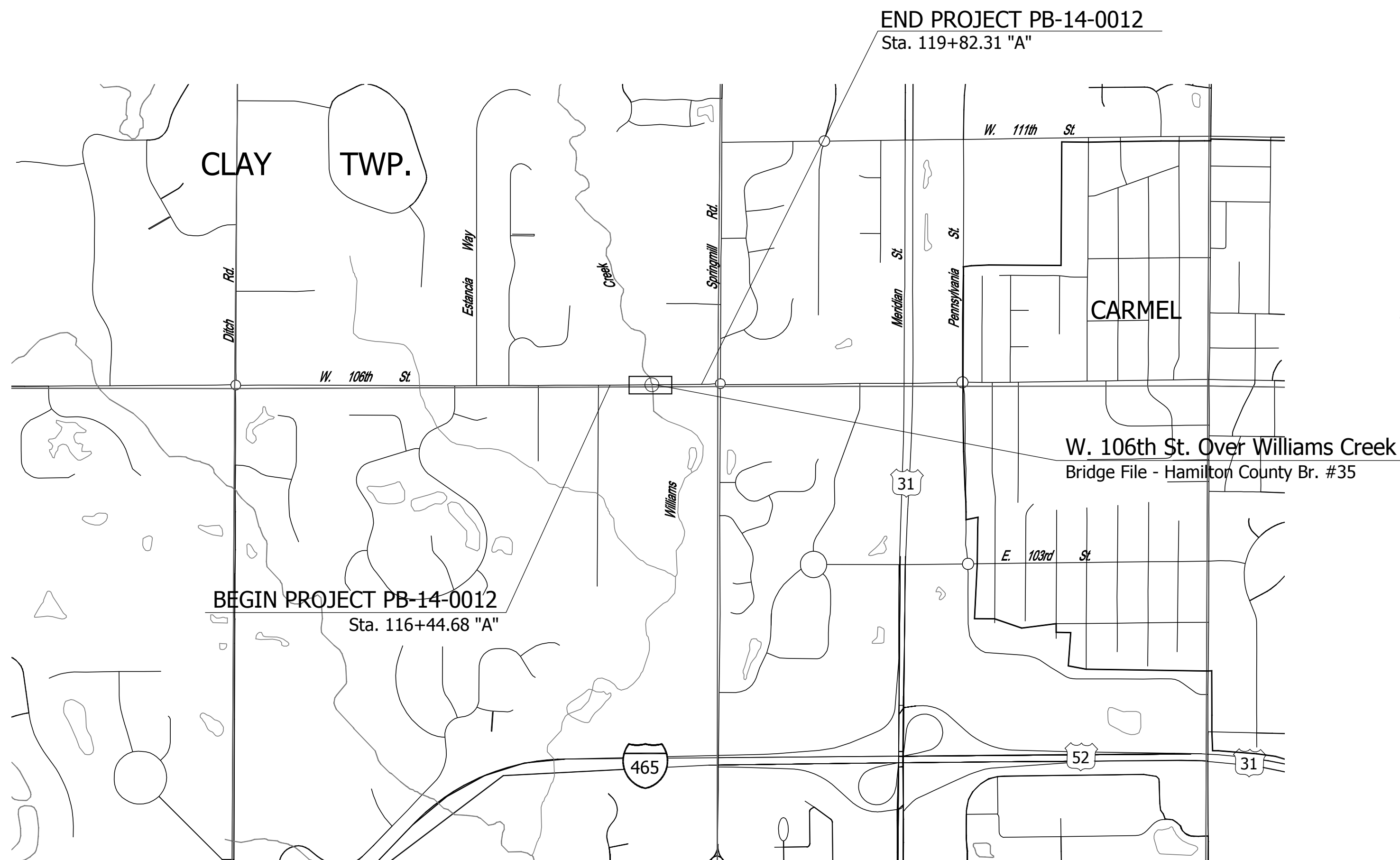
Christine Altman  
Christine Altman Member

Mark Heirbrand  
Mark Heirbrand Member

Dawn Coverdale  
Dawn Coverdale Auditor

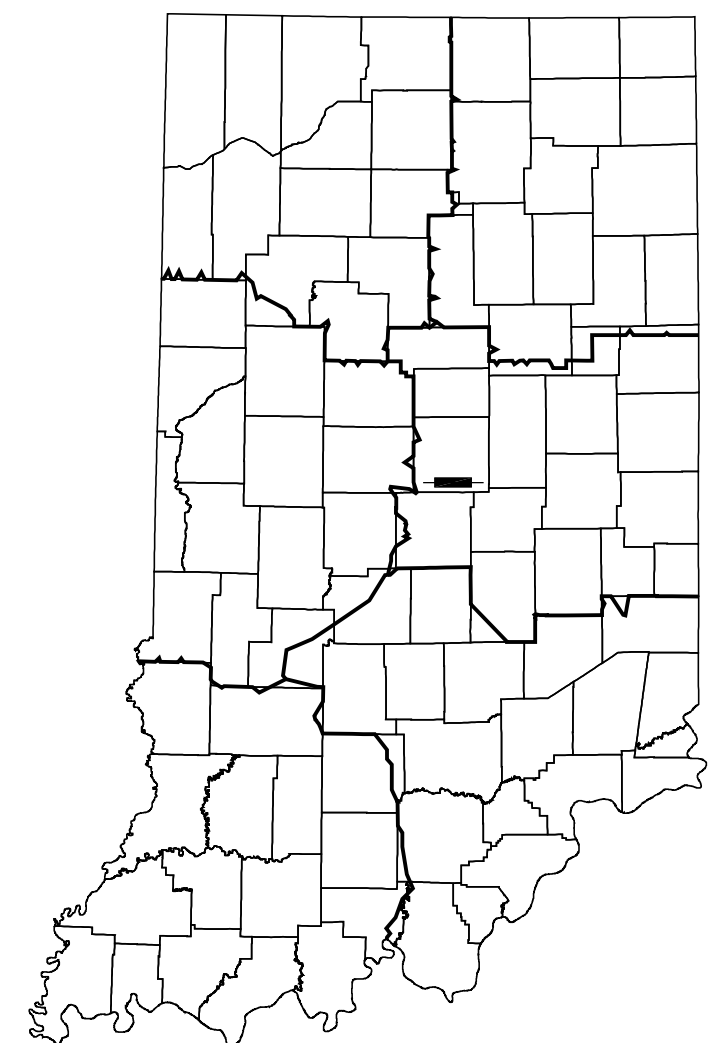
Joe Thurman  
Joe Thurman Acting County Highway Engineer

BRIDGE REHABILITATION LOCATED ON W. 106th ST. APPROXIMATELY 0.14 MILES WEST OF SPRINGMILL RD., IN SECTIONS 3 & 10, T17N, R3E, CLAY TOWNSHIP, HAMILTON COUNTY, INDIANA.



TRAFFIC DATA			
A.A.D.T.	(2015)	10,102	V.P.D.
A.A.D.T.	(2035)	18,680	V.P.D.
D.H.V	(2035)	1,870	V.P.H.
DIRECTIONAL DISTRIBUTION		50	%
TRUCKS		4%	A.A.D.T.
		4%	D.H.V.

DESIGN DATA	
DESIGN SPEED	40 M.P.H.
PROJECT DESIGN CRITERIA	3R (Non-Freeway)
FUNCTIONAL CLASSIFICATION	Major Collector
RURAL/URBAN	Urban (Intermediate)
TERRAIN	Level
ACCESS CONTROL	None



PROJECT LOCATION SHOWN BY  
(HAMILTON COUNTY, INDIANA)

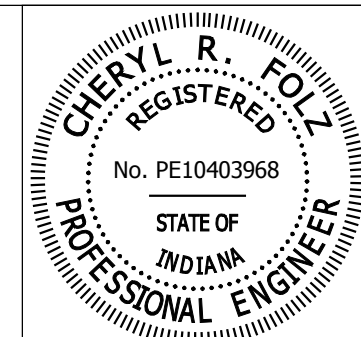
LATITUDE: 39°56'30" N LONGITUDE: 86°10'03" W

BRIDGE LENGTH: 0.03 MI.  
ROADWAY LENGTH: 0.03 MI.  
TOTAL LENGTH: 0.06 MI.  
MAX. GRADE: -5.65 %

INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2016  
TO BE USED WITH THESE PLANS

#### GENERAL NOTES

- 1) Notify the Hamilton County Surveyor's Office at 317-776-8495 a minimum of 30 days prior to construction per Indiana Code. The placement of a benchmark by the Contractor will be required as a part of this project. See Section Corner Monument and Benchmark Placement Special Provision for additional information.




PLANS PREPARED BY: LOCHMUELLER GROUP (812) 479-6200 PHONE NUMBER

CERTIFIED BY: Cheryl R. Foltz 03/02/2016 DATE

BRIDGE FILE	
HAMILTON CO. BR. #35	
DESIGNATION	
-----	
SURVEY BOOK	
1	of 34
CONTRACT	
PROJECT	
PB-14-0012	

Date: Mar 31, 2016, 8:32am User Name: vaughn  
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UTILITIES		
<u>ELECTRIC</u>  Indianapolis Power & Light Company 1230 W. Morris St. Indianapolis, Indiana 46221 (317) 261-8694 Contact: Jim Duvall jim.duvall@aes.com	<u>CABLE T.V.</u>  Brighthouse 3030 Roosevelt Ave. Indianapolis, IN 46218 (317) 339-9075 Contact: Joe Burton joe.burton@mybrighthouse.com	<u>WATER</u>  Citizens Energy Group 2150 Dr. Martin Luther King Jr. St. Indianapolis, IN 46202 (317) 927-4434 Contact: Scott Ritter sritter@citizensenergygroup.com
<u>SEWER</u>  Clay Township Regional Waste District 10701 N. College Ave., Ste A Carmel, Indiana 46280 (317) 844-9200 Contact: Ryan Hartman Ryan.Hartman@CTRWD.org	<u>COMMUNICATIONS/TELEPHONE</u>  AT&T - Distribution 5858 N. College Ave. Indianapolis, Indiana 46220 (317) 252-5143 Contact: Jacob Greenwald JG0936@att.com	<u>GAS</u>  Vectren 1600 Allisonville Rd. Nobelsville, IN 46061 (317) 776-5534 Contact: Brian Harger bharger@vectren.com
<u>MISCELLANEOUS</u>  Carmel Utilities 3450 W 131st St. Carmel, Indiana 46074 (317) 733-1480 Contact: Jeff Peters jpeters@carmel.in.gov		

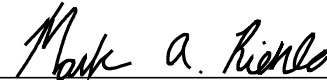
INDEX	
SHEET NO.	DRAWINGS INDEX
1	TITLE
2	INDEX
3	TYPICAL ROAD CROSS SECTION
4	GEOMETRICS & BENCHMARK INFORMATION
5	MAINTENANCE OF TRAFFIC
6	PLAN AND PROFILE
7	EROSION/SEDIMENT CONTROL PLANS
8	PROPOSED PAVEMENT MARKINGS/SIGN DETAILS & TABLES
9-10	SOIL BORINGS
11	LAYOUT
12	GENERAL PLAN
13	FOUNDATION LAYOUT
14-17	END BENT #1 & #4 CONSTRUCTION & DETAILS
18-20	INTERIOR BENT #2 & #3 CONSTRUCTION & DETAILS
21	FRAMING PLAN
22-23	BEAM DETAILS
24-27	SUPERSTRUCTURE DETAILS
28	BARRIER RAIL DETAILS
29	SCREEDS
30	R.C. BRIDGE APPROACH
31	BRIDGE SUMMARY OF QUANTITIES
32	MISCELLANEOUS ROAD QUANTITIES
33-34	CROSS SECTIONS

NOTE:

Project PB-14-0012 will be constructed concurrently and will require coordination with INDOT Contract No. R-36021. The City of Carmel or INDOT may be contacted to receive additional information on INDOT Contract No. R-36021.

REVISIONS		
SHEET NO.	DATE	REVISED



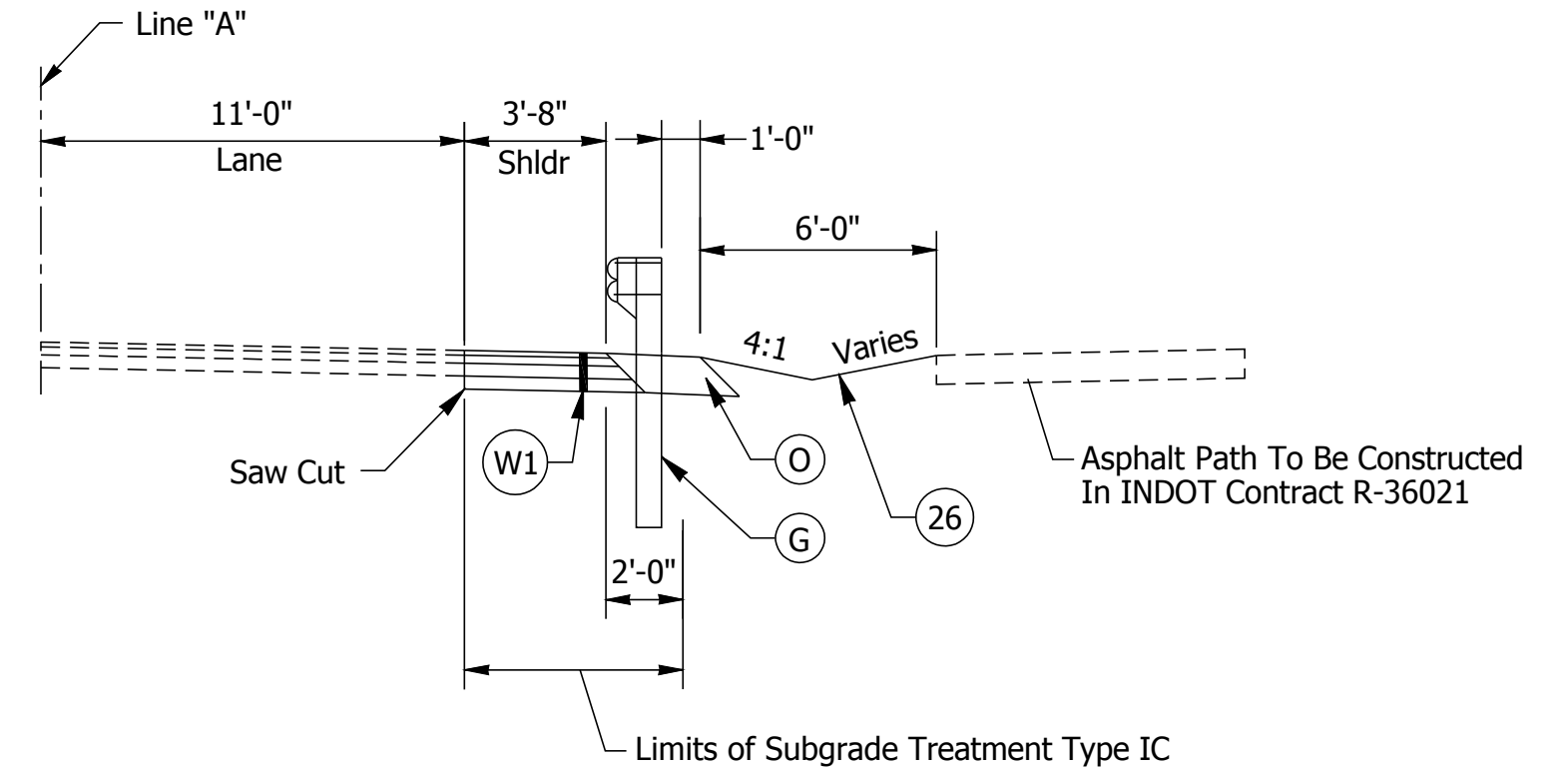
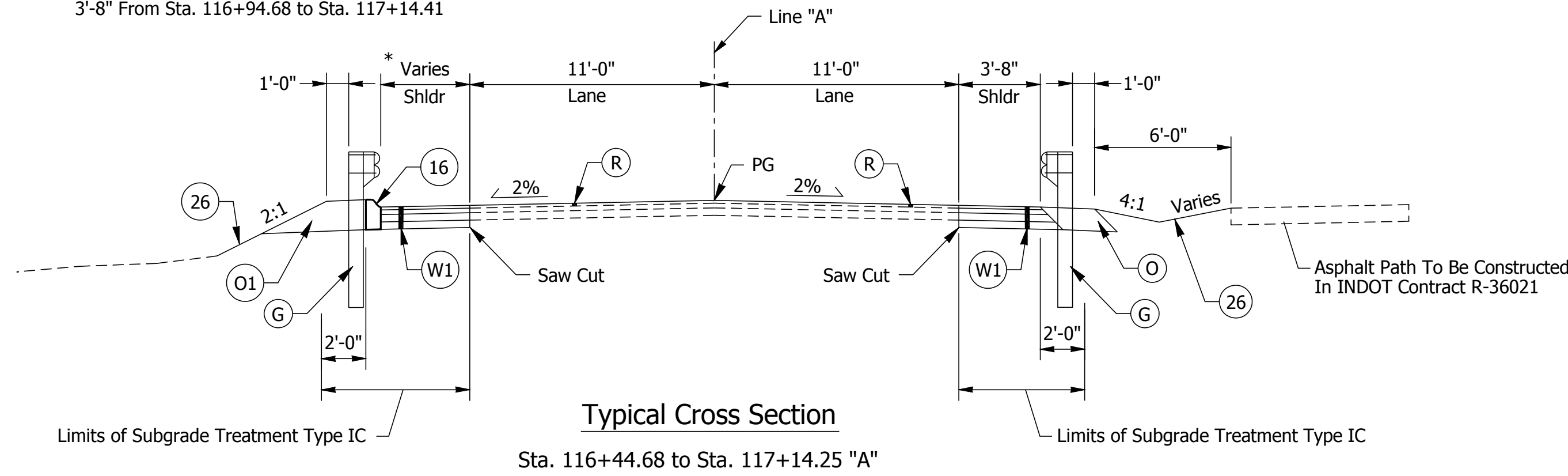
RECOMMENDED FOR APPROVAL		03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED: _____	MAR	DRAWN: _____
		TAM
CHECKED: _____	CRF	CHECKED: _____
		MAR

HAMILTON COUNTY HIGHWAY DEPARTMENT	
INDEX SHEET	

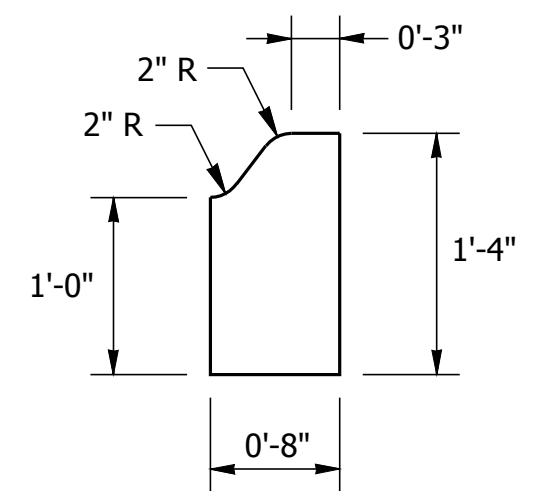
HORIZONTAL SCALE	BRIDGE FILE	
NONE	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
NONE	----	
SURVEY BOOK	SHEETS	
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CONTRACT	PROJECT	
----	PB-14-0012	

Date: Mar 31, 2016, 6:32am User Name: vscgbr  
 File: S:\215-00391\cadd\CAD Misc DWG\2150039 Typ.dwg

\* Varies 6.0' to 3'-8" From Sta. 116+44.68 to Sta. 116+94.68  
 3'-8" From Sta. 116+94.68 to Sta. 117+14.41



Auxiliary Widening Section Right  
 Sta. 115+93.75 to Sta. 116+44.68 "A"

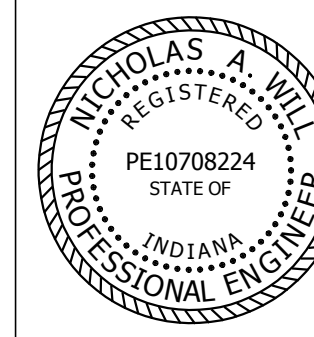
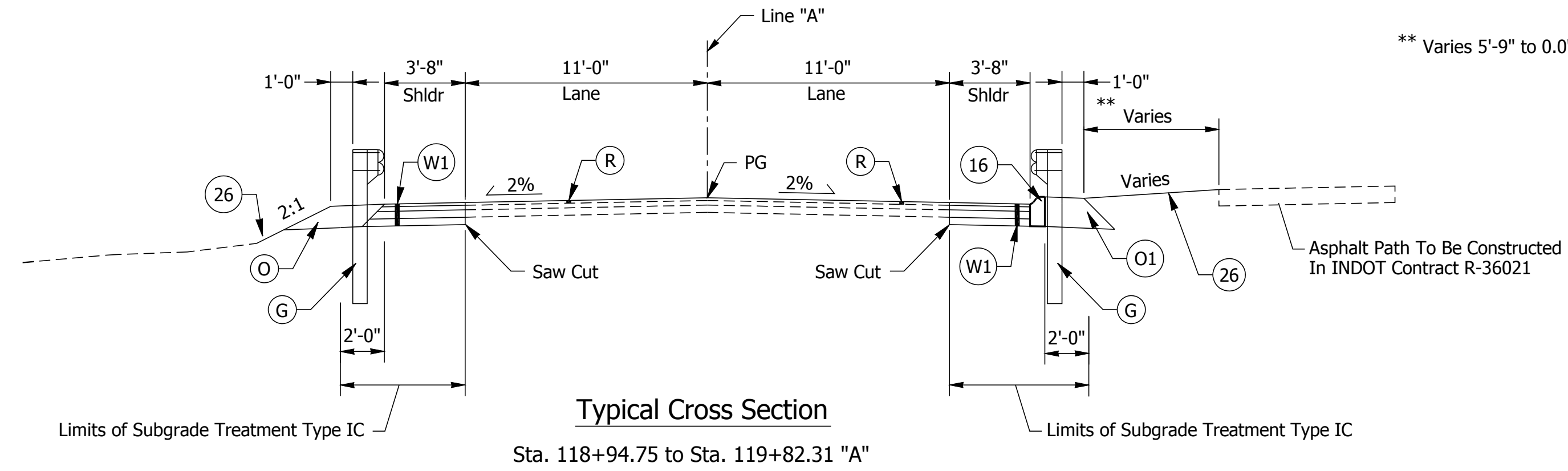
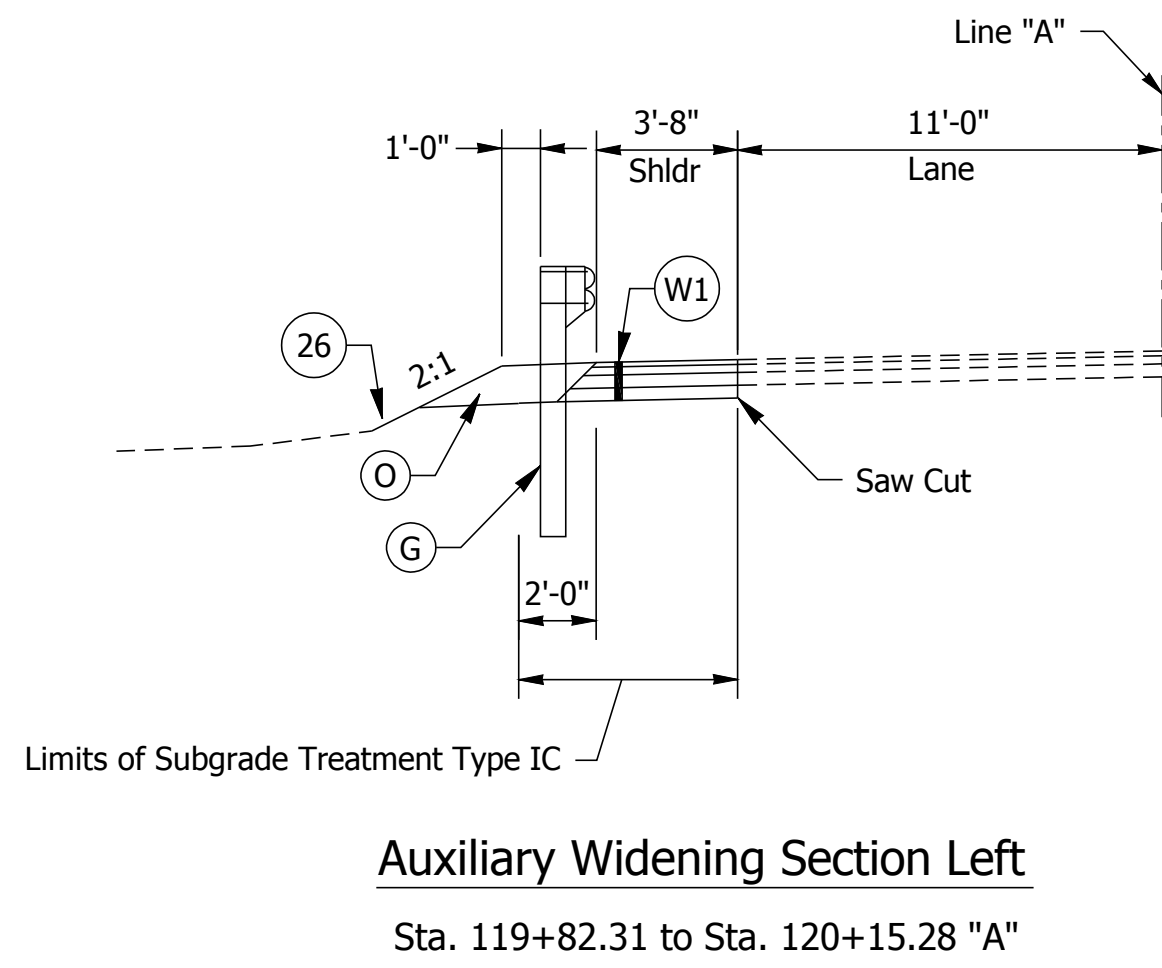


Concrete Curb Type B Modified  
 Scale: 1:1

LEGEND

- (G) W-Beam Guardrail
- (R) HMA Wedge & Level, Type B on Milling Asphalt, 1.5"
- (W1) Widening With HMA, Type B  
165 #/SYS, HMA Surface, Type B, on  
275 #/SYS, HMA Intermediate, Type B, on  
440 #/SYS, HMA Base, Type B, on  
4" Compacted Aggregate, No.53, Base on  
Subgrade Treatment, Type IC
- (O) 12" Compacted Aggregate, No.53
- (O1) 16" Compacted Aggregate, No.53
- (16) Concrete Curb Type B Modified
- (26) Mulched Seeding, U & Erosion Control Blanket

NOTE: Asphalt for Tack Coat, Liquid Asphalt Sealant,  
 and Joint Adhesive shall be applied per Section 400 of  
 the Standard Specifications.



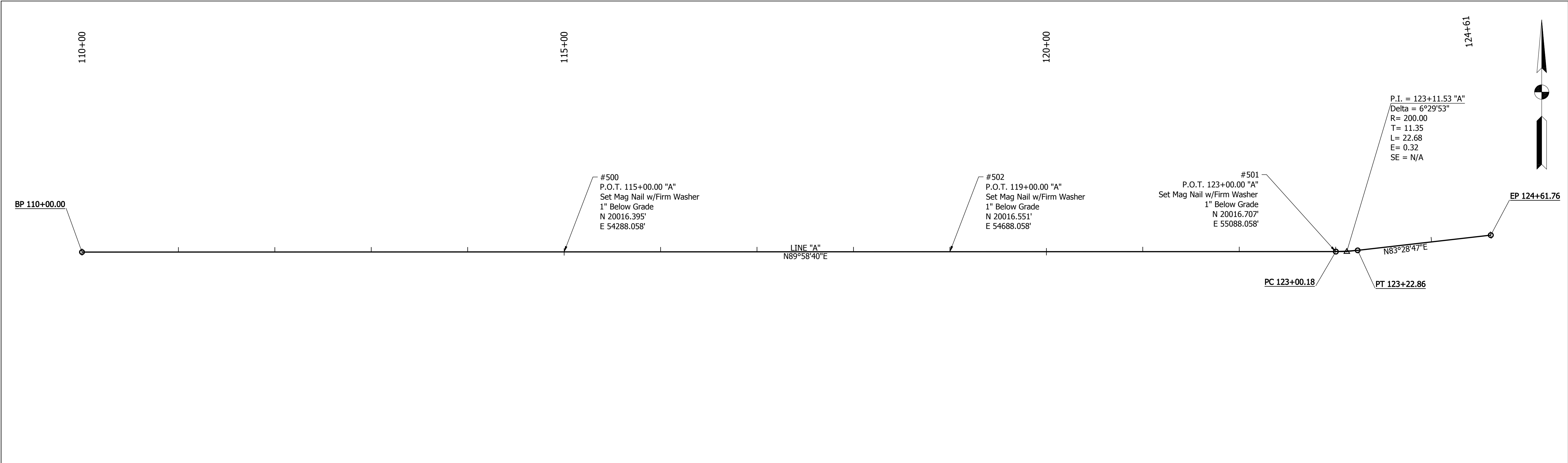
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	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: LNB	CHECKED: NAW	

HAMILTON COUNTY  
 HIGHWAY DEPARTMENT

TYPICAL SECTIONS  
 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1"=5'	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
1"=5'	----
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
----	PB-14-0012

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PROJECT BENCHMARKS

PROJECT BENCHMARKS  
ELEVATIONS ARE BASED ON TIES TO LOCAL CONTROL POINTS FROM CAD DRAWINGS  
FROM A PREVIOUS TOPOGRAPHIC SURVEY GENERATED BY THE SCHNEIDER CORPORATION  
AND PROVIDED BY HAMILTON COUNTY

BM1 ELEV. 839.53  
16.9' LT. OF STA. 111+85.1 LINE "A"  
RR SPK. UP 12" IN E. SIDE JOINT UTIL. POLE #4-134B

BM2 ELEV. 832.25  
21.9' RT. OF STA. 115+90.5 LINE "A"  
CHIS. X ON TOP S-MOST BOLT OF F. HYD.

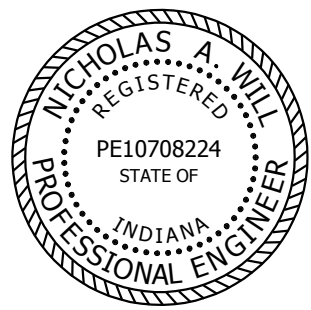
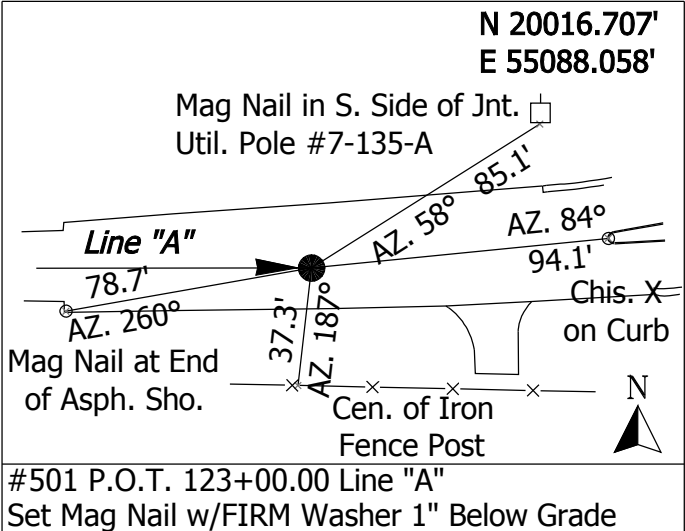
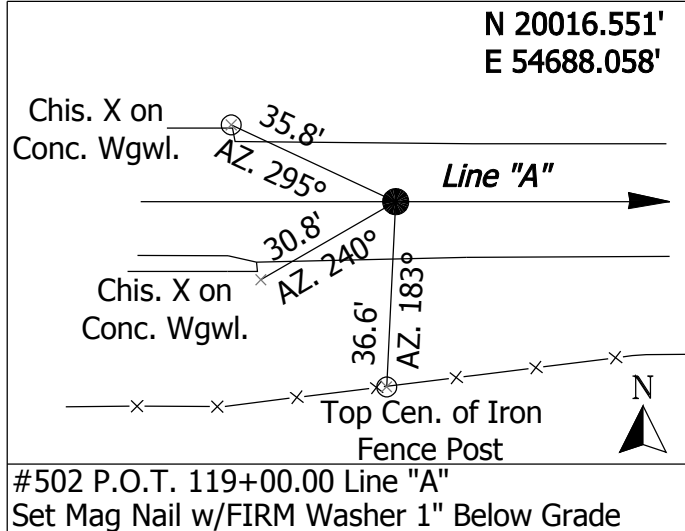
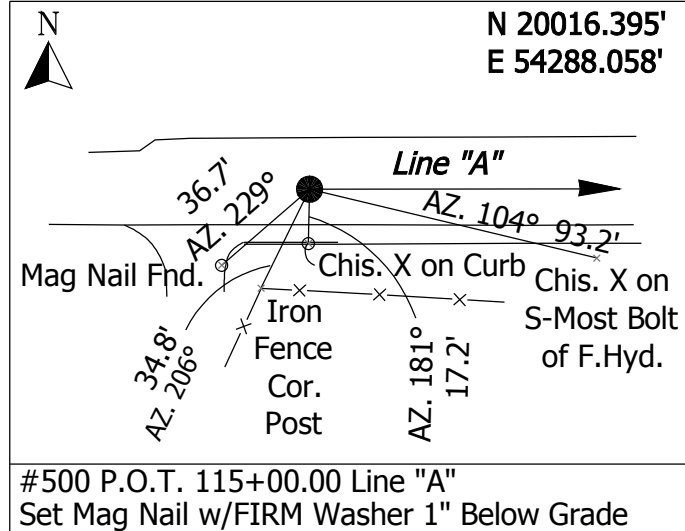
BM3 ELEV. 813.54  
19.2' RT. OF STA. 121+10.7 LINE "A"  
CHIS. X ON TOP S-MOST BOLT OF F. HYD.

BM4 ELEV. 817.11  
20.9' RT. OF STA. 124+47.3 LINE "A" (FROM BACK TAN. PROJ. FWD.)  
CHIS. SQU. ON N. SIDE LT. POLE BASE IN SW QUAD. 16TH AND SPRING MILL

BM HAM65 ELEV. 820.97  
15.9' RT. OF STA. 117+41.3 LINE "A"  
DIK IN SW WINGWALL OF BRIDGE

LEVEL EQUATIONS:  
821.461 feet NGVD 1929 published by IDNR  
= 821.06 feet NAVD 88 datum per Corpscon/Vertcon  
= 820.97 feet this survey

BENCHMARK DATA PUBLISHED BY IDNR:  
DNR BM HAM 65, 1989  
In Hamilton County, Carmel Quad., in the NE ¼ of Section 10, T.  
17 N., R. 3 E., 2nd P.M.; about 2.0 miles southwest of Carmel; at  
the West 106th Street bridge over Williams Creek; set on top of  
the southwest concrete wingwall of the bridge, 16.5 feet south of  
the centerline of West 106th Street, 2.5 feet north of the south  
end of the wingwall, about level with the bridge floor; a Indiana  
Department of Natural Resources control station tablet, stamped  
"HAM 65 1989".  
821.461 feet NGVD 1929 2nd Order



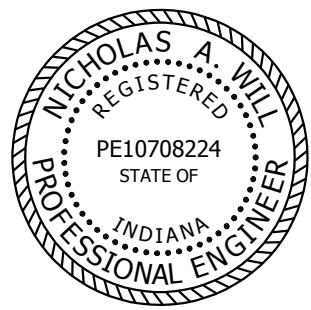
RECOMMENDED FOR APPROVAL	<i>Nicholas A. Will</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED: _____	NAW	DRAWN: _____
		TAM
CHECKED: _____	LNB	CHECKED: _____
		NAW

HAMILTON COUNTY HIGHWAY DEPARTMENT
GEOMETRICS, BENCHMARK CONTROL & BENCHMARK INFORMATION

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
1"=50'	----
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
----	PB-14-0012

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NOTE:  
For Sign Spacing for Detour See Std. Dwg 801-TCDT-02 & 801-TCDT-03.

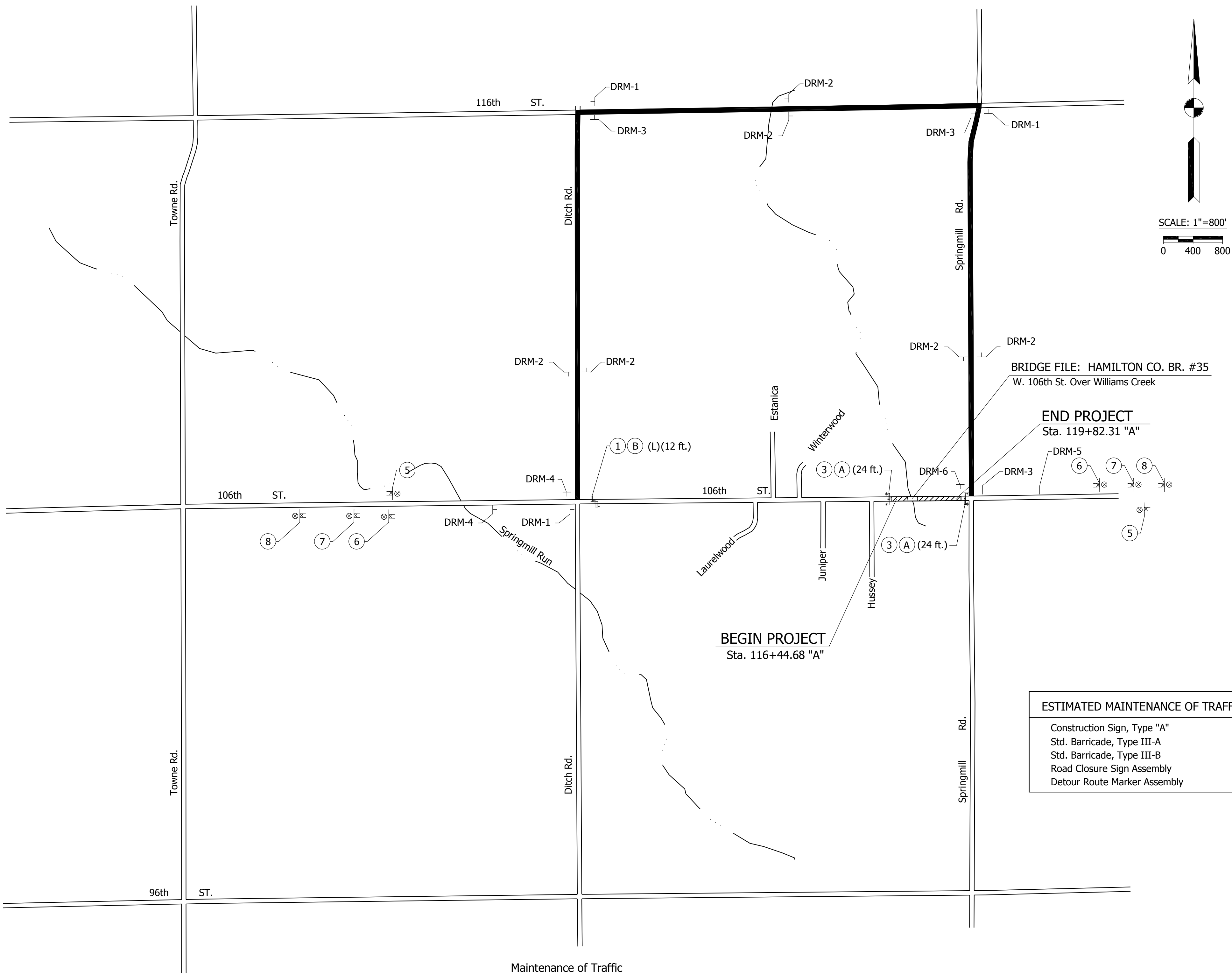


RECOMMENDED FOR APPROVAL	<i>Nicholas A. Will</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: LNB	CHECKED: NAW	

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

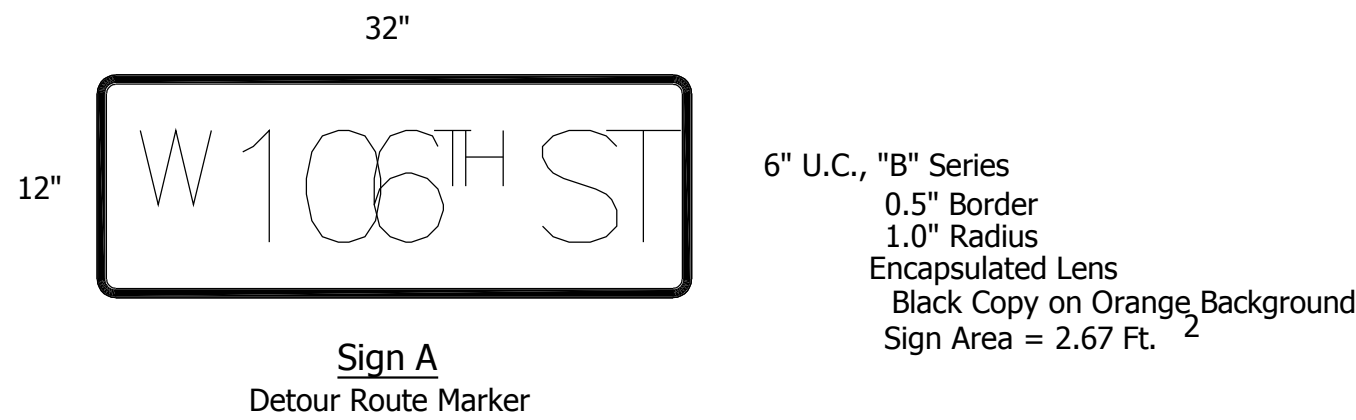
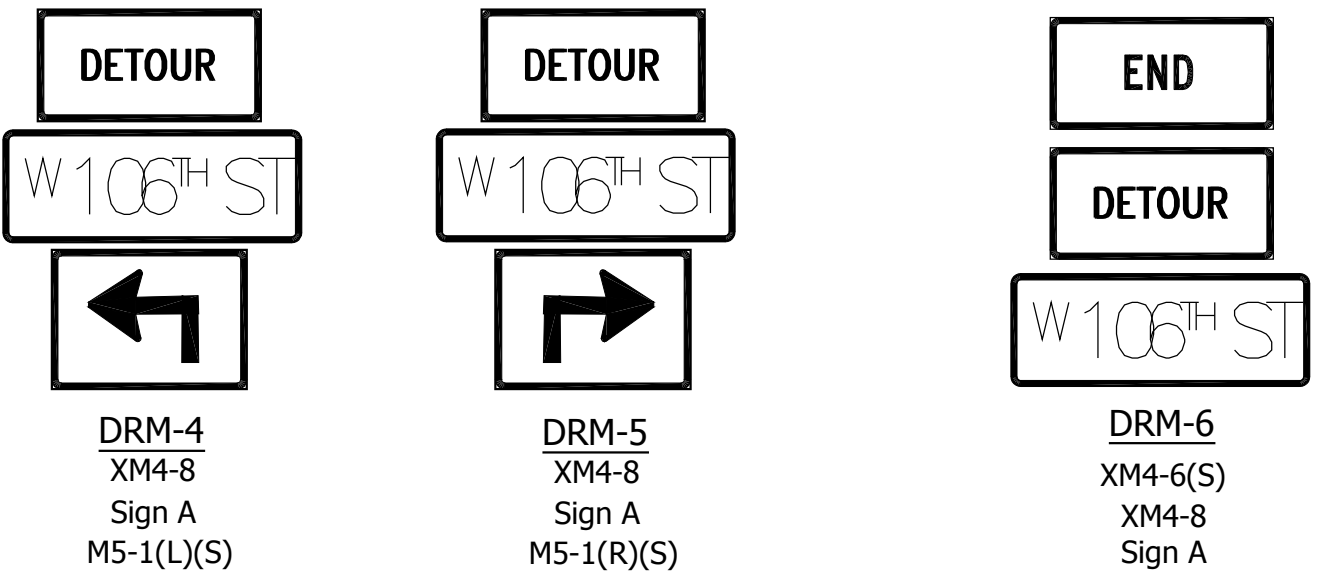
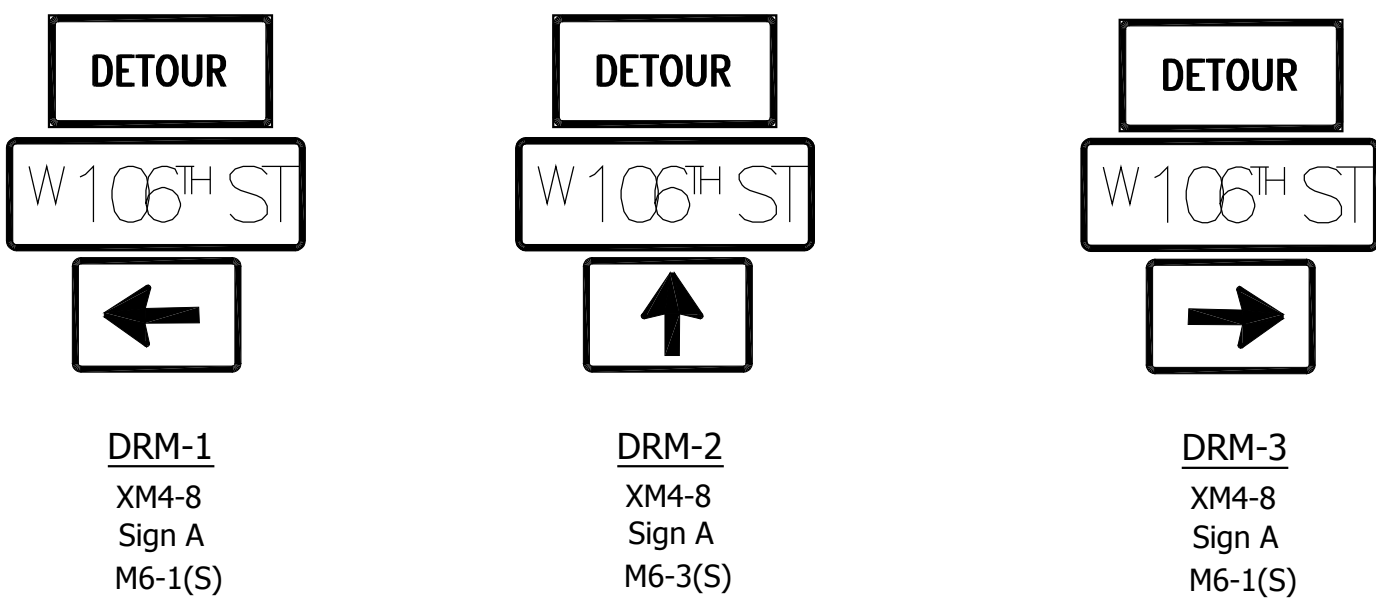
MAINTENANCE OF TRAFFIC  
DETOUR ROUTE

HORIZONTAL SCALE	BRIDGE FILE	
1"=800'	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
1"=800'	----	
SURVEY BOOK	SHEETS	
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CONTRACT	PROJECT	
----	PB-14-0012	



Maintenance of Traffic

1. Detour Existing 106th St. Thru Traffic Via Ditch Rd, 96th St., & Springmill Rd.
2. Access Shall Be Maintained To All Existing Driveways & Entrances within Closure Limits.

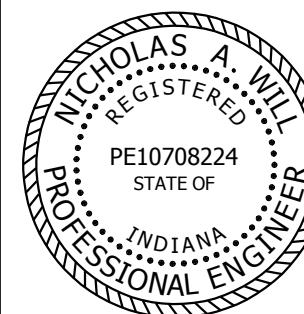


LEGEND

- (A) Std. Barricade, Type III-A (Length)
- (B) Std. Barricade, Type III-B (Length)
- (1) Road Closure Sign Assembly; R11-4 (Road Closed to Thru Traffic); XM4-10(R) (Detour Arrow)
- (3) Road Closure Sign Assembly; R11-2 (Road Closed)
- (5) Construction Sign A, XG20-2 (End Construction)
- (6) Construction Sign A, XW20-2 (Detour Ahead); Sign A (106th St.)
- (7) Construction Sign A, XG20-3 (Road Closed Ahead); Sign A (106th St.)
- (8) Construction Sign A, XG20-5 (106th St. Closed "Date")
- (9) Construction Sign A, XW20-3 (Road Closed 500')
- (10) Construction Sign A, XG20-5 (Road Closed 1000')
- Construction Sign
- Detour Route Marker
- Construction Warning Light, A
- Construction Warning Light, B
- Std. Barricade

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NOTE: See Sheet 4 for Benchmarks & Alignment References.  
See Sheet 31 for Earthwork Summary.



RECOMMENDED  
FOR APPROVAL

*Nicholas A. Will*  
DESIGN ENGINEER

03/02/2016  
DATE

DESIGNED: NAW

DRAWN: CCW

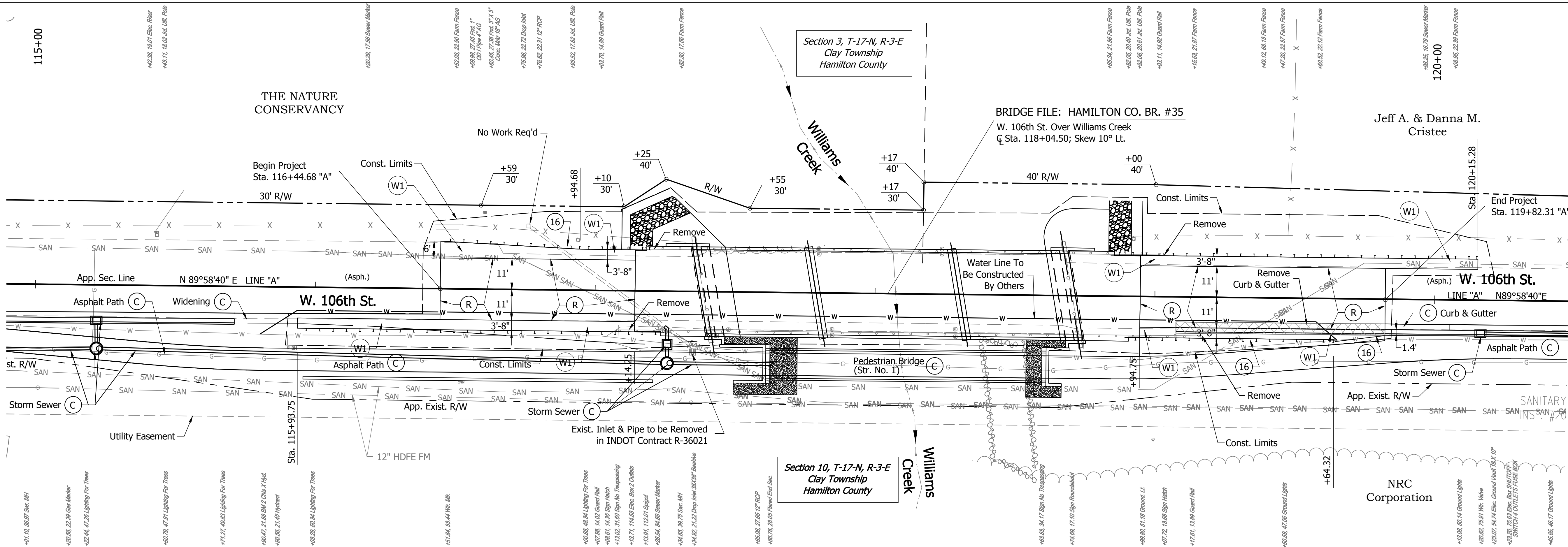
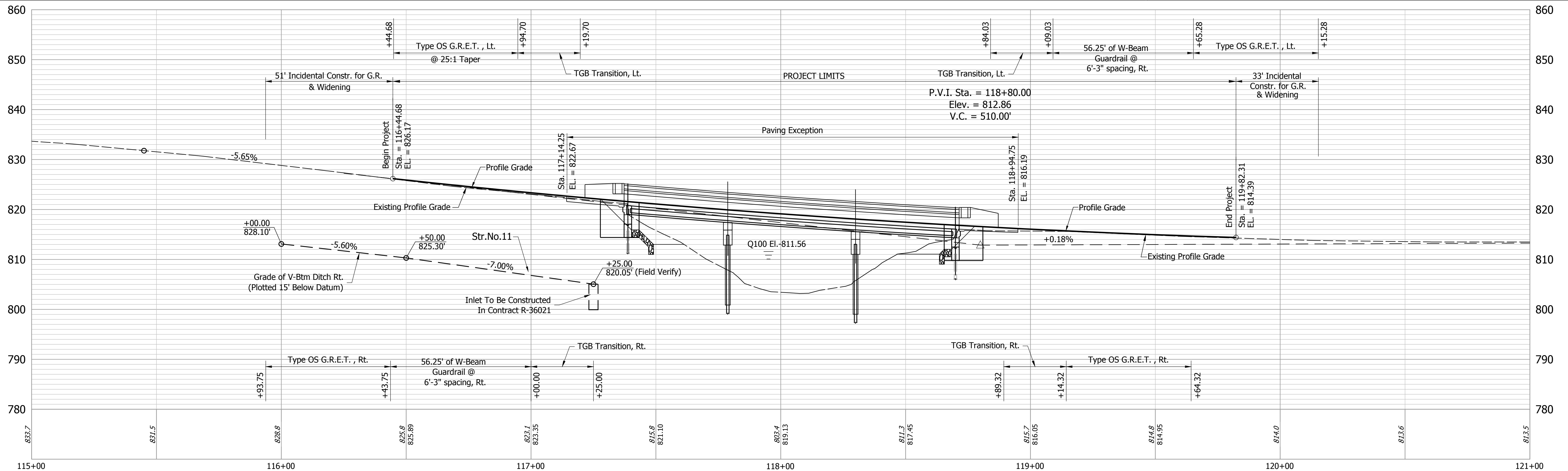
CHECKED: LNB

CHECKED: NAW

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

PLAN & PROFILE  
LINE "A"

HORIZONTAL SCALE 1"=20'	BRIDGE FILE HAMILTON CO. BR. #35
VERTICAL SCALE 1"=10'	DESIGNATION ----
SURVEY BOOK ----	SHEETS 6 of 34
CONTRACT ----	PROJECT PB-14-0012

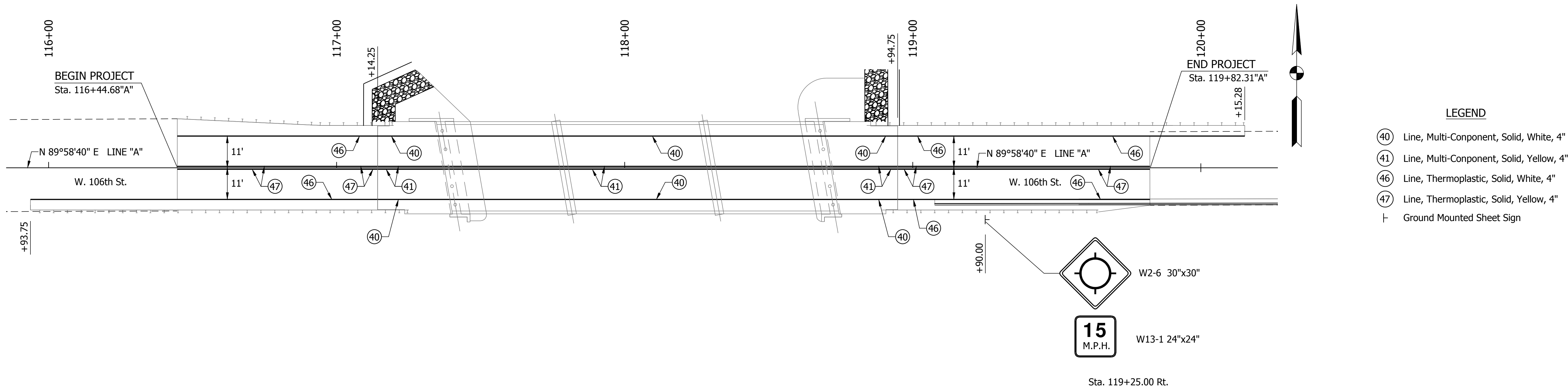


LEGEND

- (C) To Be Constructed In INDOT Contract R-36021
- (R) HMA Wedge & Level, Type B on Milling Asphalt, 1.5"
- (W1) Widening With HMA, Type B 165 #/SYS, HMA Surface, Type B, on 275 #/SYS, HMA Intermediate, Type B, on 440 #/SYS, HMA Base, Type B, on 4" Compacted Aggregate, No.53, Base on Subgrade Treatment, Type 1C
- (16) Concrete Curb Type B Modified

All R/W on this sheet to be as shown.  
All R/W on this sheet described from Line "A" except as shown.



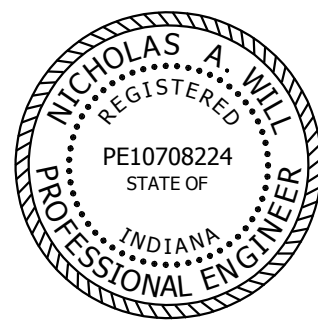


PAVEMENT MARKING SUMMARY					
FROM STATION	TO STATION	THERMOPLASTIC		MULTI-COMPONENT	
		LINE, SOLID, WHITE, 4"	LINE, SOLID, YELLOW, 4"	LINE, SOLID, WHITE, 4"	LINE, SOLID, YELLOW, 4"
		LF	LF	LF	LF
Line "A"					
115+93.75	117+14.25	192	142		
117+14.25	118+94.75			362	362
118+94.75	120+15.28	209	176		
TOTAL		401	318	362	362

SIGN, SHEET, & SUPPORTS, REMOVE		
LOCATION	DESCRIPTION	QUANTITY (EACH)
Line "A"		
118+90.00 Rt.	Roundabout Ahead	1
TOTAL		1

SHEET SIGN & POST SUMMARY															
SIGN								POST							
PLAN SHEET NO. / LINE	SIGN LOCATION (STA.)	SIGN CODE	SIGN	SIGN SIZE (IN. x IN.)	GROUND - MOUNTED SIGN AREA (Sq. Ft.)			SQUARE						REMARKS	
								2 in. x 2 in. x 12 ga. (TYPE 2)			2-1/4 in. x 2-1/4 in. x 12 ga. (TYPE 1)				
											REINFORCED		REINFORCED		UNREINFORCED
					POST LENGTH (Ft.)			POST LENGTH (Ft.)		POST LENGTH (Ft.)					
					0.080	0.100	0.125	1	2	TOTAL (Ft.)	1	TOTAL	1		TOTAL
Line "A"															
	119+25.00 Rt.	W2-6	Roundabout Ahead	30"x30"	6.25						15.00	15.00			
		W13-1	15 mph	24"x24"	4.00										
TOTAL:					10.25							15.00			

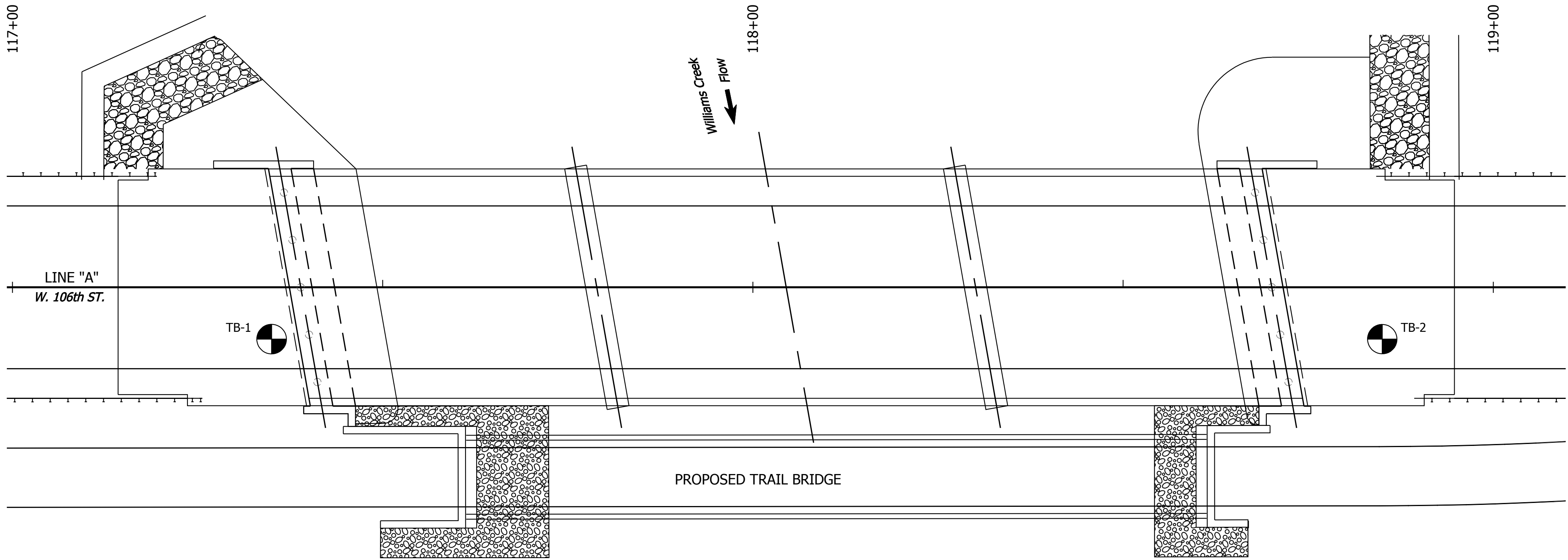
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RECOMMENDED FOR APPROVAL	<i>Nicholas A. Will</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED:	NAW	DRAWN: CCW
CHECKED:	CRF	CHECKED: MAR

HAMILTON COUNTY HIGHWAY DEPARTMENT
PROPOSED PAVEMENT MARKINGS/SIGN DETAILS & TABLES

HORIZONTAL SCALE 1"=20'	BRIDGE FILE HAMILTON CO. BR. #35
VERTICAL SCALE 1"=20'	DESIGNATION ----
SURVEY BOOK	SHEETS 8 of 34
CONTRACT ----	PROJECT PB-14-0012



PLAN VIEW

PILE LOADING FOR GEOTECHNICAL TESTING

	BENT #2	BENT #3
Pile Size, Type & Grade	12x74 HP, Gr.50	12x74 HP, Gr.50
Design Load	180 kip	180 kip
Factor of Safety	2.5	2.5
Factored Design Load	450 kip	450 kip
Downdrag Friction	N/A	N/A
Scour Zone Friction	21 kip	21 kip
Ultimate Driving Load *	471 kip	471 kip
Testing Method	INDOT Standard Specification 701.05(a)	

"Ultimate Driving Load" is Equivalent to "Nominal Driving Resistance" ( $R_{nd}$ ) in INDOT Standard Specifications Section 701.05(a).

LEGEND OF SAMPLE TYPES

SS-Split Spoon  
RC-Rock Core  
ST-Shelby Tube

7988 Centerpoint Drive Suite 100  
Indianapolis, IN 46256  
317-849-4990

TEST BORING LOG

CLIENT Lochmueller Group, Inc. BORING # TB-1  
PROJECT NAME Proposed Hamilton County Bridge No. 35 Rehabilitation JOB # 170GC00021  
PROJECT LOCATION 106th Street over Williams Creek STATION 117+35, Line "A"  
Hamilton County, Indiana OFFSET 7 ft Right

DRILLING and SAMPLING INFORMATION

Date Started 12/22/14 Drill Rig Type Truck Rock Core Dia. --- in. Weather Cloudy  
Date Completed 12/26/14 Hammer Type Auto Shelby Tube OD --- in. Temperature 50 ° F  
Drill Foreman C. Carroll Hammer Wt. 140 lbs.  
Inspector D. Hamm Hammer Drop 30 in.  
Boring Method HSA Spoon Sampler OD 2.0 in.

SOIL CLASSIFICATION		Stratum Elevation, ft	Stratum Depth, ft	Depth to Sample, ft	Sample No.	Sample Type	Standard Penetration Test, Blows per 6 in. increments	Moisture Content, %	Pocket Penetration Test, PSI	Remarks
SURFACE ELEVATION 822										
18 in. Asphalt.		820.5	1.5	1	1	SS	7-13-6			Ground surface elevation estimated based on plans provided by Lochmueller Group, Inc.
Dark brown, slightly moist, medium dense, Gravelly Sand. (Lab No. 1) A-1-b		818.0	4.0	2	2	SS	4-2-2			
Brown, moist, soft, loam. (Lab No. 2) A-6 (3)				3	3	SS	1-3-2	12.2	3.5	
Brown, very moist, loose to medium dense, Sandy loam. (Lab No. 3) A-2-4		811.5	10.5	10	4	SS	3-2-2	19.6	1.75	
-wet below 16.0 ft.				15	5	SS	1-1-6			Sample No. 4: Afterberg Limits Test: LL = 34, PL = 15, PI = 19
Brown, wet, medium dense, Sandy Gravel. (Lab No. 4) A-1-b		804.0	18.0	18	6	SS	3-14-14			
Gray, wet, medium dense, Sandy Gravel. (Lab No. 4) A-1-b		801.5	20.5	20	7	SS	2-6-8			
Gray, moist to slightly moist, very stiff to hard, loam. (Lab No. 5) A-6 (3)		799.0	23.0	23	8	SS	5-7-8			
				25	9	SS	6-9-13			Borehole backfilled with bentonite and plugged with concrete at surface.
				25	10	SS	11-13-15	10.1		
				30	11	SS	16-21-21	10.2	4.5+	
				35	12	SS	15-34-50/2"	7.2	4.5+	
					13	SS	40-30-50/2"	10.6	2.5	Sample No. 12: Afterberg Limits Test: LL = 24, PL = 11, PI = 13

Sample Type  
SS - Driven Split Spoon  
ST - Pressed Shelby Tube  
CA - Continuous Flight Auger  
RC - Rock Core  
CU - Cuttings  
MC - California Sampler

Depth to Groundwater  
Noted on Drilling Tools  
At Completion  
After hours  
Core Depth

Boring Method  
HSA - Hollow Stem Augers  
CFA - Continuous Flight Augers  
CA - Continuous Flight Auger  
MC - Mud Drilling  
HA - Hand Auger

Page 1 of 3

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317-849-4990

TEST BORING LOG

CLIENT Lochmueller Group, Inc. BORING # TB-1  
PROJECT NAME Proposed Hamilton County Bridge No. 35 Rehabilitation JOB # 170GC00021  
PROJECT LOCATION 106th Street over Williams Creek STATION 117+35, Line "A"  
Hamilton County, Indiana OFFSET 7 ft Right

DRILLING and SAMPLING INFORMATION

Date Started 12/22/14 Drill Rig Type Truck Rock Core Dia. --- in. Weather Cloudy  
Date Completed 12/26/14 Hammer Type Auto Shelby Tube OD --- in. Temperature 50 ° F  
Drill Foreman C. Carroll Hammer Wt. 140 lbs.  
Inspector D. Hamm Hammer Drop 30 in.  
Boring Method HSA Spoon Sampler OD 2.0 in.

SOIL CLASSIFICATION		Stratum Elevation, ft	Stratum Depth, ft	Depth to Sample, ft	Sample No.	Sample Type	Standard Penetration Test, Blows per 6 in. increments	Moisture Content, %	Pocket Penetration Test, PSI	Remarks
(continued)										
Gray, moist to slightly moist, very stiff to hard, loam. (Lab No. 5) A-6 (3)		780.0	42.0	42	14	SS	3-9-31			Sample No. 15: Unconfined Compressive Strength = 1.53 tsf Dry Density = 128.4 pcf
Gray, moist, dense, Sandy loam. (Lab No. 3) A-2-4				45	15	SS	13-50/2"	10.2	3.25	
Gray, moist to slightly moist, hard, loam. (Lab No. 5) A-6		775.0	47.0	50	16	SS	20-50/2"	9.8	1.0	
				55	17	SS	32-50	10.4	4.5+	
				60	18	SS	20-50/2"	12.2	2.0	Sample No. 19: Unconfined Compressive Strength = 8.84 tsf Dry Density = 132.4 pcf Drilling mud introduced at 68.0 ft
				65	19	SS	15-45-50/5"	8.8	4.5+	
Gray, wet, very loose, Sandy loam. (Lab No. 3) A-2-4 (0)		750.0	72.0	70	20	SS	1-1-1	16.6		
Gray, wet, medium dense to very dense.		743.5	78.5	75	21	SS	7-7-7			

Sample Type  
SS - Driven Split Spoon  
ST - Pressed Shelby Tube  
CA - Continuous Flight Auger  
RC - Rock Core  
CU - Cuttings  
MC - California Sampler

Depth to Groundwater  
Noted on Drilling Tools  
At Completion  
After hours  
Core Depth

Boring Method  
HSA - Hollow Stem Augers  
CFA - Continuous Flight Augers  
CA - Continuous Flight Auger  
MC - Mud Drilling  
HA - Hand Auger

Page 2 of 3

CLIENT Lochmueller Group, Inc. BORING # TB-1  
PROJECT NAME Proposed Hamilton County Bridge No. 35 Rehabilitation JOB # 170GC00021  
PROJECT LOCATION 106th Street over Williams Creek STATION 117+35, Line "A"  
Hamilton County, Indiana OFFSET 7 ft Right

DRILLING and SAMPLING INFORMATION

Date Started 12/22/14 Drill Rig Type Truck Rock Core Dia. --- in. Weather Cloudy  
Date Completed 12/26/14 Hammer Type Auto Shelby Tube OD --- in. Temperature 50 ° F  
Drill Foreman C. Carroll Hammer Wt. 140 lbs.  
Inspector D. Hamm Hammer Drop 30 in.  
Boring Method HSA Spoon Sampler OD 2.0 in.

SOIL CLASSIFICATION		Stratum Elevation, ft	Stratum Depth, ft	Depth to Sample, ft	Sample No.	Sample Type	Standard Penetration Test, Blows per 6 in. increments	Moisture Content, %	Pocket Penetration Test, PSI	Remarks
(continued)										
Sandy Gravel. (Lab No. 4) A-1-b				82	22	SS	12-16-33			Sample No. 20: Afterberg Limits Test: LL = 15, PL = 14, PI = 1
				85	23	SS	6-12-30			
				90	24	SS	16-32-50/4"			
				95	25	SS	19-19-42			
Bottom of Test Boring at 100.0 ft.		722.0	100.0	100						

Sample Type  
SS - Driven Split Spoon  
ST - Pressed Shelby Tube  
CA - Continuous Flight Auger  
RC - Rock Core  
CU - Cuttings  
MC - California Sampler

Depth to Groundwater  
Noted on Drilling Tools  
At Completion  
After hours  
Core Depth

Boring Method  
HSA - Hollow Stem Augers  
CFA - Continuous Flight Augers  
CA - Continuous Flight Auger  
MC - Mud Drilling  
HA - Hand Auger

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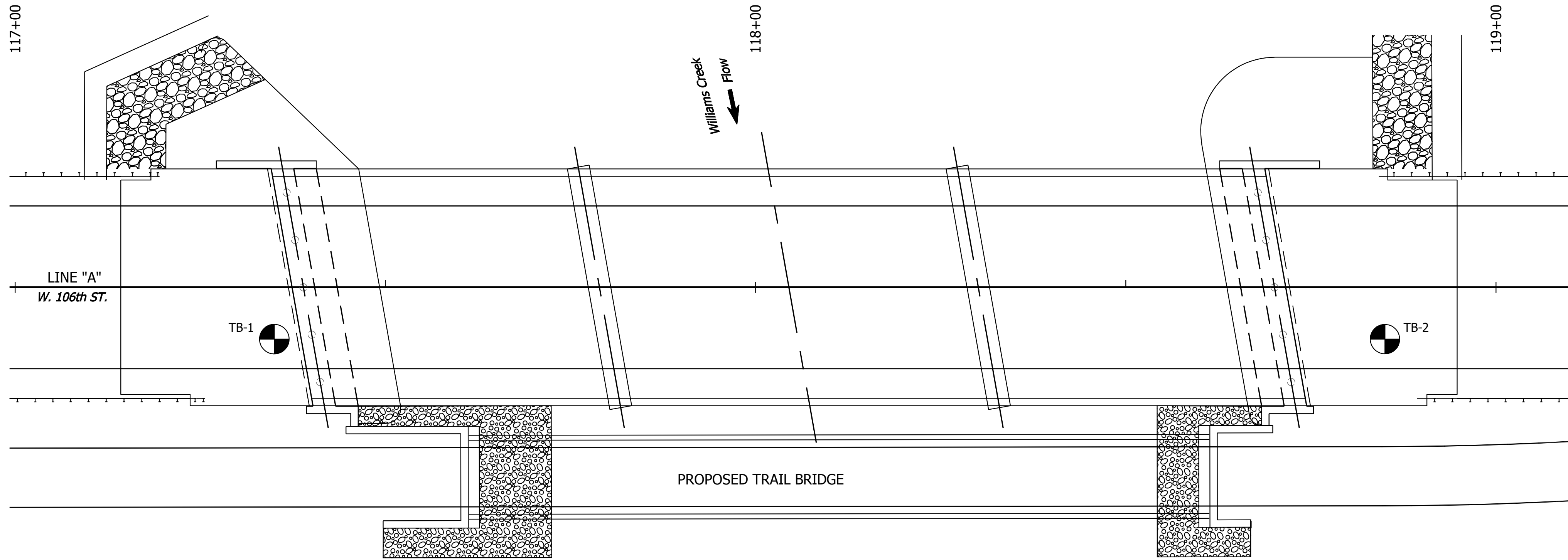
RECOMMENDED FOR APPROVAL  
DESIGN ENGINEER  
DATE 03/02/2016

DESIGNED: MAR DRAWN: VCH  
CHECKED: CRF CHECKED: MAR

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

SOIL BORINGS

HORIZONTAL SCALE 1"=10'	BRIDGE FILE HAMILTON CO. BR. #35
VERTICAL SCALE 1"=10'	DESIGNATION ----
SURVEY BOOK	SHEETS 9 of 34
CONTRACT ----	PROJECT PB-14-0012



PLAN VIEW

LEGEND OF SAMPLE TYPES

SS-Split Spoon  
RC-Rock Core  
ST-Shelby Tube

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TEST BORING LOG

CLIENT Lochmueller Group, Inc. BORING # TB-2  
PROJECT NAME Proposed Hamilton County Bridge No. 35 Rehabilitation JOB # 170GC00021  
PROJECT LOCATION 106th Street over Williams Creek STATION 118+85, Line "A"  
Hamilton County, Indiana OFFSET 7 ft Right

DRILLING and SAMPLING INFORMATION

Date Started 12/22/14 Drill Rig Type Truck Rock Core Dia. --- in. Weather Cloudy  
Date Completed 12/23/14 Hammer Type Auto Shelby Tube OD --- in. Temperature 46° F  
Drill Foreman C. Carroll Hammer Wt. 140 lbs.  
Inspector D. Hamm Hammer Drop 30 in.  
Boring Method HSA Spoon Sampler OD 2.0 in.

SOIL CLASSIFICATION		Stratum Elevation, ft	Stratum Depth, ft	Depth, ft	Sample No.	Sample Type	Standard Penetration Test, Blows per ft. in.	Moisture Content, %	Pocket Penetration Test, PSI	Remarks
SURFACE ELEVATION 816										
19 in. Asphalt.		814.4	1.6		1	SS				
Brown, moist, loose, Gravelly Sand. (Lab No. 1) A-1-b				5	2	SS				
Brown, moist, soft, Silty Loom. (Lab No. 6) A-7-s (15)		810.0	6.0		3	SS		18.6	<0.25	
Gray, wet, medium dense, Gravelly Sand, with wood fragments encountered at 12.0 ft. (Lab No. 1) A-1-b		805.5	10.5	10	4	SS		29.7	<0.25	Sample No. 4: Afterberg Limits Test: LL = 43, PL = 20, PI = 23
Gray, wet, loose, Sandy Loom. (Lab No. 3) A-2-4		802.5	13.5		5	SS				
Gray, wet, medium dense to dense, Sandy Gravel. (Lab No. 7) A-1-o		800.0	16.0	15	6	SS				
				20	7	SS				
				25	8	SS				
				30	9	SS				
				35	10	SS				
Gray, moist to slightly moist, hard, Loom. (Lab No. 5) A-6		792.0	24.0		11	SS				
				30	12	SS				
				35	13	SS				
				40	14	SS				

Sample Type  
SS - Split Spoon  
ST - Pressed Shelby Tube  
CA - Continuous Flight Auger  
RC - Rock Core  
CU - Cuttings  
MC - California Sampler

Depth to Groundwater  
Noted on Drilling Tools 10.5 ft.  
At Completion 0.0 ft.  
After --- hours --- ft.  
Core Depth --- ft.

Boring Method  
HSA - Hollow Stem Augers  
CFA - Continuous Flight Augers  
CA - Continuous Flight Auger  
MC - Mud Drilling  
HA - Hand Auger

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Indianapolis, IN 46256  
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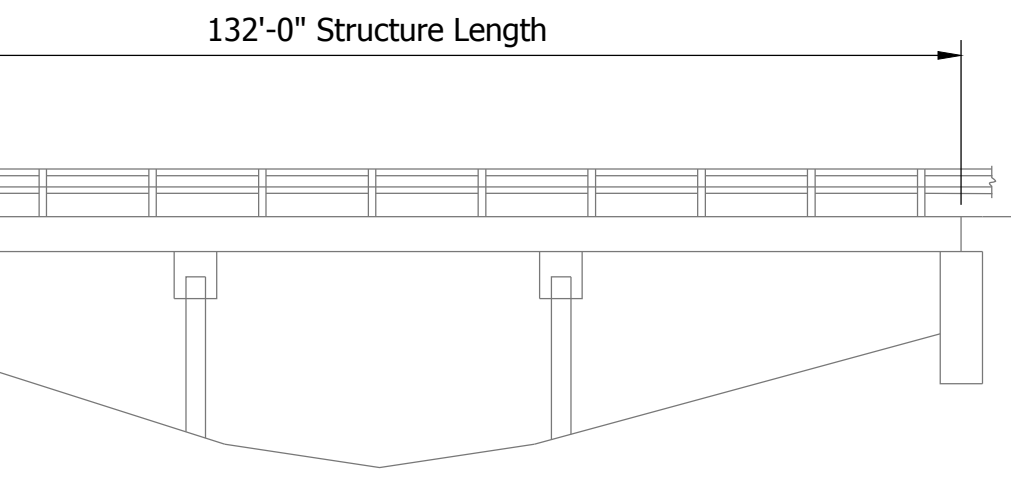
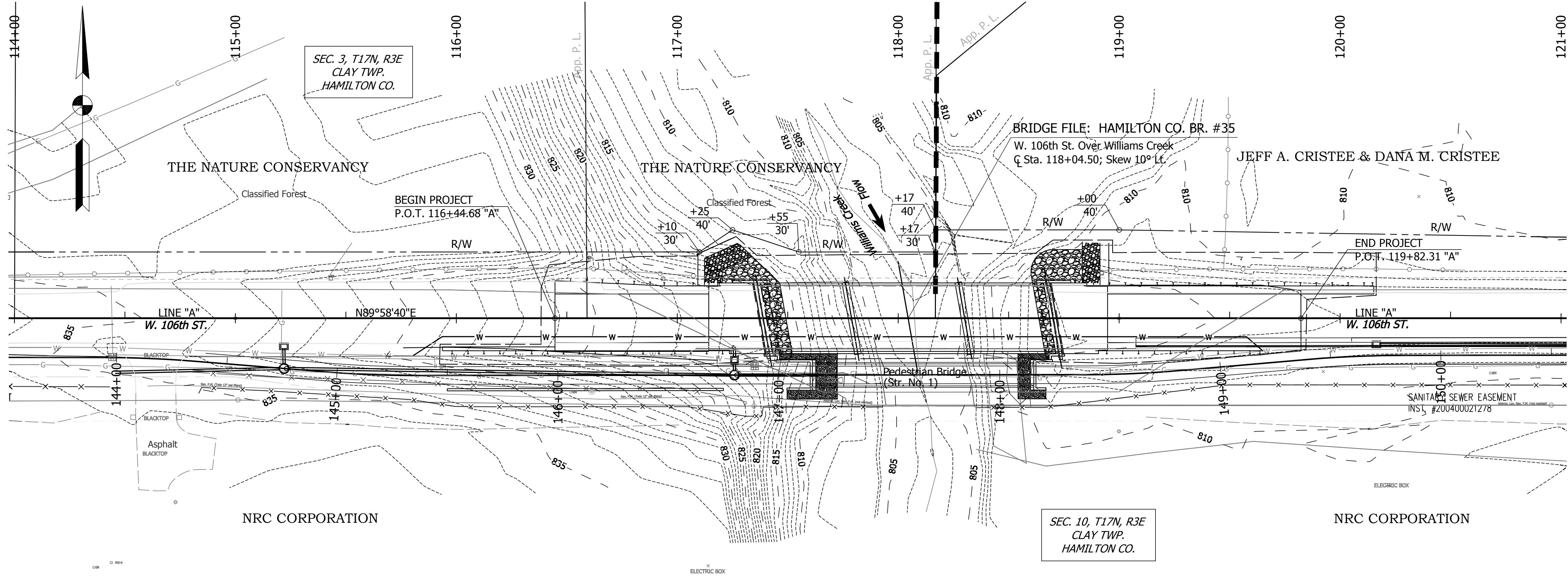
TEST BORING LOG

CLIENT Lochmueller Group, Inc. BORING # TB-2  
PROJECT NAME Proposed Hamilton County Bridge No. 35 Rehabilitation JOB # 170GC00021  
PROJECT LOCATION 106th Street over Williams Creek STATION 118+85, Line "A"  
Hamilton County, Indiana OFFSET 7 ft Right

DRILLING and SAMPLING INFORMATION

Date Started 12/22/14 Drill Rig Type Truck Rock Core Dia. --- in. Weather Cloudy  
Date Completed 12/23/14 Hammer Type Auto Shelby Tube OD --- in. Temperature 46° F  
Drill Foreman C. Carroll Hammer Wt. 140 lbs.  
Inspector D. Hamm Hammer Drop 30 in.  
Boring Method HSA Spoon Sampler OD 2.0 in.

SOIL CLASSIFICATION		Stratum Elevation, ft	Stratum Depth, ft	Depth, ft	Sample No.	Sample Type	Standard Penetration Test, Blows per ft.	Moisture Content, %	Proctor Density, %	Remarks
(continued)										
Gray, very moist to moist, hard, Loom. (Lab No. 5) A-6		774.0	42.0							
Gray, wet, very dense, Sandy Loom. (Lab No. 3) A-2-4				45	14	SS	40-50/4"			
Gray, moist, hard, Loom. (Lab No. 5) A-6		767.5	48.5	50	15	SS	50/5"	4.5+		
				55	16	SS	30-50/5"	11.4	2.5	Sample No. 16: Unconfined Compressive Strength = 1.1 ksi Dry Density = 126.3 pcf
Gray, wet, very dense, Sandy Loom. (Lab No. 3) A-2-4		759.0	57.0	60	17	SS	30-50/4"			
				65	18	SS	27-28-46	9.9	4.5+	
Gray, moist, hard, Loom. (Lab No. 5) A-6		752.5	63.5		19	SS	12-27-34	9.9		
				70	20	SS	17-19-24	4.5+		
Gray, wet, dense to very dense, Gravelly Sand. (Lab No. 1) A-1-b		746.0	70.0	75	21	SS	50/5"			



**EXISTING STRUCTURE**  
PRESTRESSED CONCRETE BOX BEAM BRIDGE  
TO BE REHABILITATED  
3 SPANS; SKEW 10°  
CLEAR ROADWAY: 28'  
NOT TO SCALE

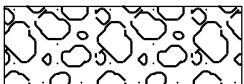
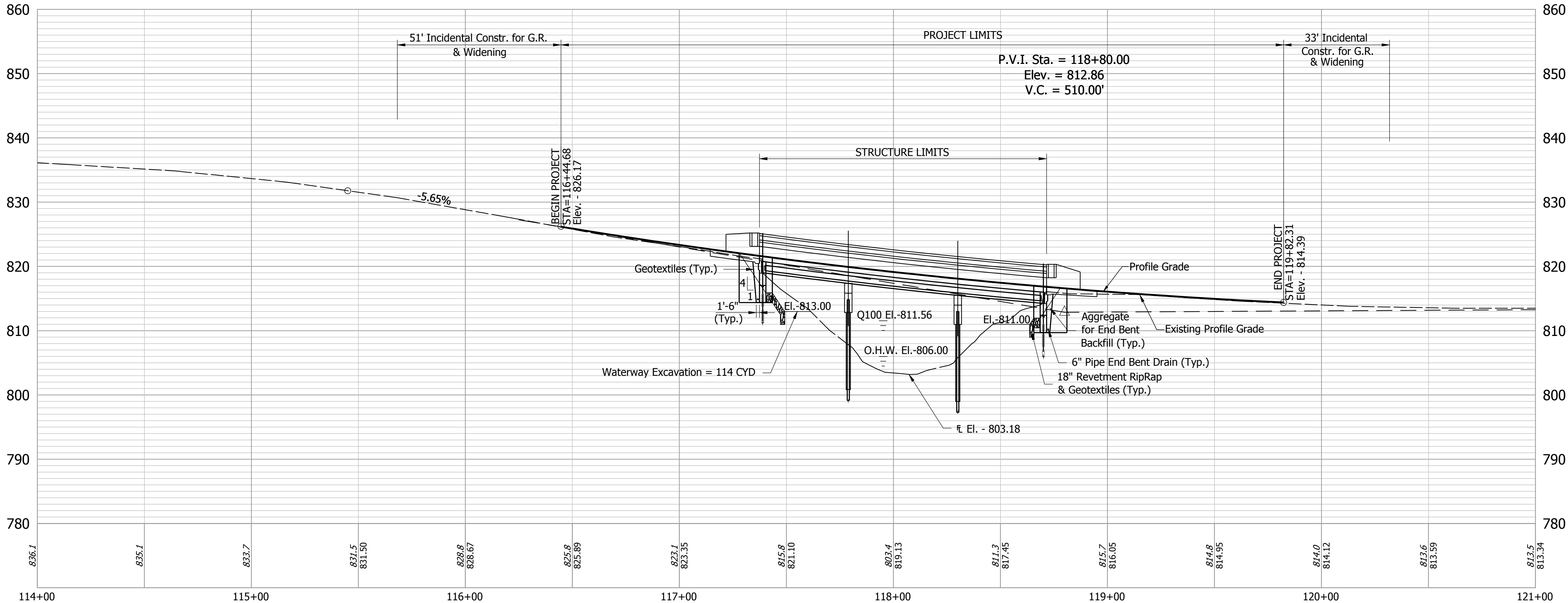
**RIPRAP & GEOTEXTILE QUANTITIES**

	BENT #1	BENT #4
Geotextiles	60 yd <sup>2</sup>	60 yd <sup>2</sup>
Revetment Riprap	45 Tons	45 Tons

**END BENT BACKFILL QUANTITIES**

	BENT #1	BENT #4
Aggregate for End Bent Backfill	19 yd <sup>3</sup>	18 yd <sup>3</sup>
Geotextile	47 yd <sup>2</sup>	46 yd <sup>2</sup>
Pipe, End Bent Drain, 6in.	46 Lft.	46 Lft.

ALL R/W ON THIS SHEET TO BE AS SHOWN.  
ALL R/W ON THIS SHEET DESCRIBED FROM  
LINE "A" EXCEPT AS SHOWN.



DENOTES LIMITS OF 18" REVETMENT RIPRAP AND GEOTEXTILES

**HYDRAULIC INFORMATION**

PROPOSED AREA REQUIRED	=430.4 ft. <sup>2</sup>
PROPOSED AREA PROVIDED	=454.76 ft. <sup>2</sup>
Q100 DISCHARGE	=2480 ft. <sup>3</sup> /sec.
Q100 ELEVATION	=811.56 ft.
PROPOSED VELOCITY	=5.85 ft./sec.
PROPOSED BACKWATER DEPTH (Q100)	=0.17 ft.
PROPOSED MIN. LOW STRUCTURE ELEV.	=813.00 ft.
EXISTING LOW STRUCTURE ELEV.	=814.6 ft.
EXISTING BACKWATER DEPTH	=0.17 ft.
EXISTING WATERWAY OPENING	=422.2 ft. <sup>2</sup>
Q100 SCOUR ELEVATION	=799.21 ft.
Q500 SCOUR ELEVATION	=797.35 ft.

**W. 106th ST. OVER WILLIAMS CREEK**  
CONTINUOUS COMPOSITE PRESTRESSED CONCRETE  
SPREAD BOX BEAM BRIDGE

3 SPANS @ 40'-0", 51'-2" & 40'-0"  
CLEAR ROADWAY: 30'-0"  
SKEW: 10° LT.

HAMILTON COUNTY, INDIANA

HORIZONTAL SCALE	BRIDGE FILE
1"=30'	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
1"=10'	----
SURVEY BOOK	SHEETS
	11 of 34
CONTRACT	PROJECT
----	PB-14-0012

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RECOMMENDED FOR APPROVAL	Mark A. Riehl	03/02/2016
DESIGNED:	MAR	DRAWN:
CHECKED:	CRF	CHECKED:

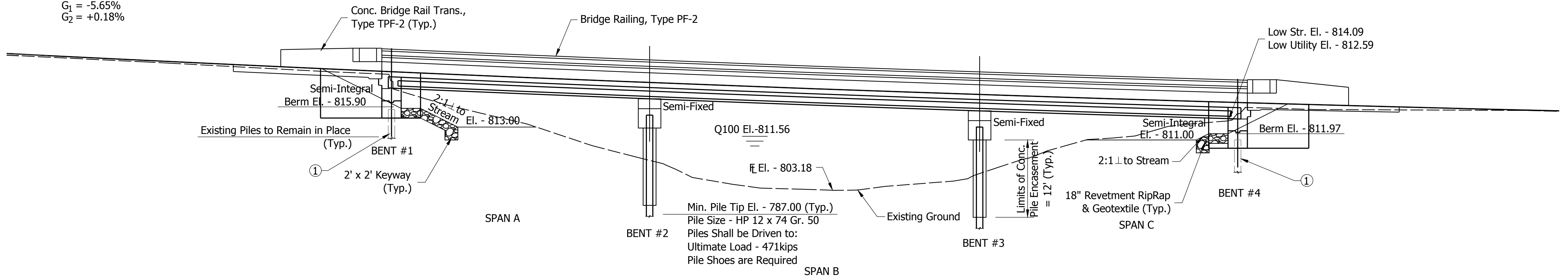
HAMILTON COUNTY  
HIGHWAY DEPARTMENT

LAYOUT

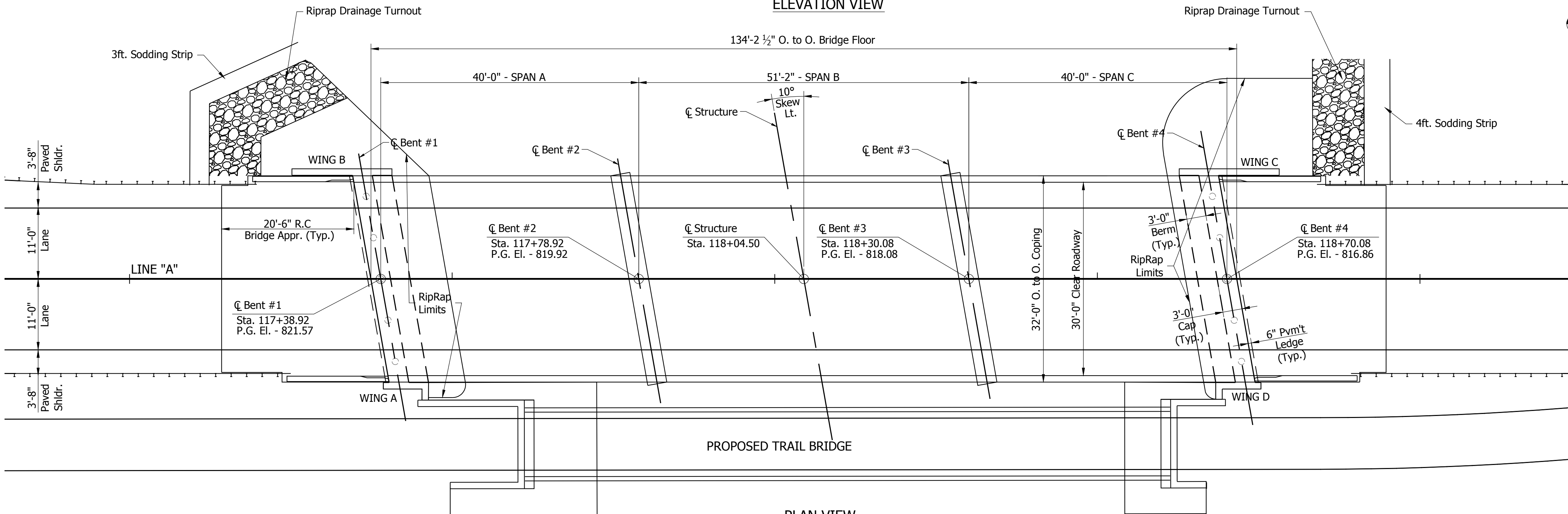
VERTICAL CURVE INFORMATION

PVI - 118+80.00  
EL. = 812.86  
V.C. = 510'  
G<sub>1</sub> = -5.65%  
G<sub>2</sub> = +0.18%

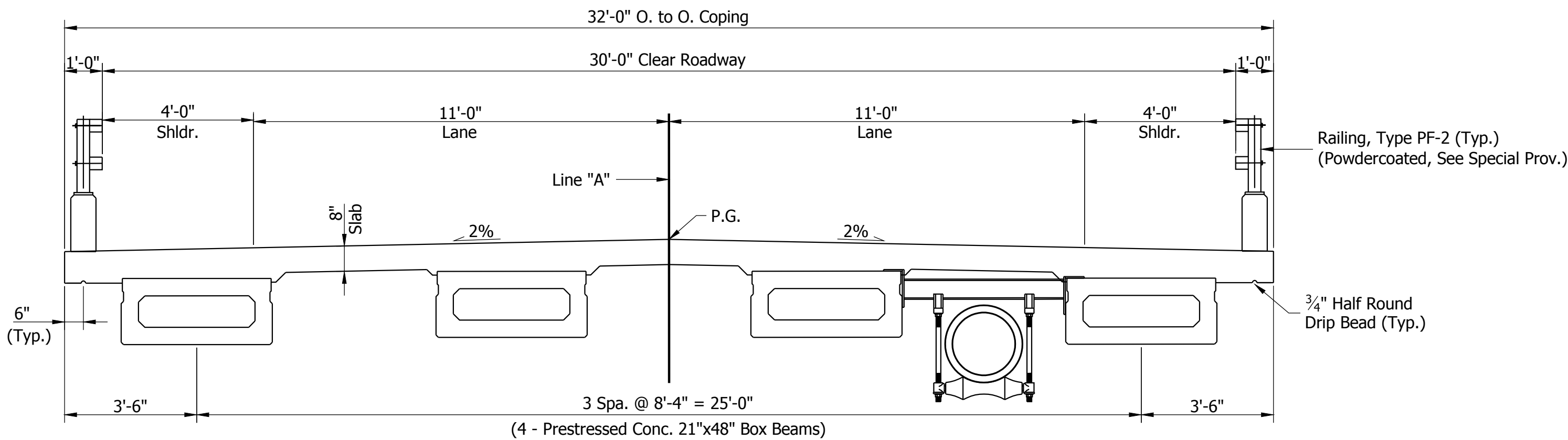
STRUCTURE TO BE BUILT TO A 510' VERTICAL CURVE



ELEVATION VIEW



PLAN VIEW



TYPICAL CROSS SECTION

SCALE: 3/8" = 1'-0"

TYPICAL ROAD CROSS SECTION

See Sheet No. 3

DESIGN STRESSES

Class A Concrete:  $f_c = 3,500$  psi

Class C Concrete:  $f_c = 4,000$  psi

Reinforcing Steel (Grade 60):  $f_y = 60,000$  psi

DESIGN DATA

Live Load: The Superstructure is Designed for HL-93 Loading. Loading in Accordance with AASHTO LRFD Bridge Design Specifications, Sixth Edition, 2012, Including Interim Revisions.

The Substructure is Designed for HS20-44 Loading. Loading in Accordance with 1996 AASHTO Specifications, & Subsequent Interim Specifications thru 2002.

Dead Load: Actual Weight Plus 35 lbs/ft<sup>2</sup> For Future Wearing Surface

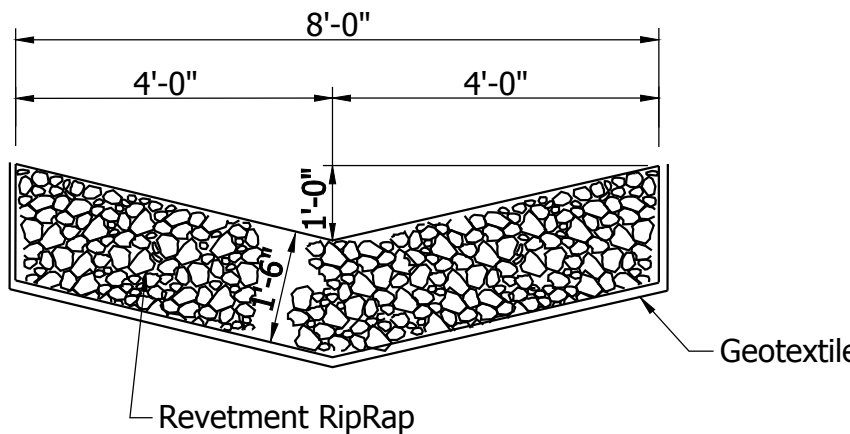
Bridge Floor: Designed with a 1/2" Sacrificial Wearing Surface.

SEISMIC DATA

AASHTO LRFD Bridge Design Specifications with Interims.  
Seismic Design Category A  
S1-0.049  
Site Class C  
Fv=1.70

GENERAL NOTES

- Reinforcing Steel Covering Shall Be 2".
- Chamfer Exposed Edges 1" Unless Noted.
- Concrete Requirements: Concrete in Substructure to be Class "A". Concrete in Superstructure to be Class "C".
- Plans for the Existing Structure are on file at the Hamilton County Highway Department as Bridge File Hamilton 76-35, Contract No. PB-78-0001 and are available upon Request.



SECTION THRU RIPRAP DRAINAGE TURNOUT

NOT TO SCALE

SUGGESTED BRIDGE CONSTRUCTION SEQUENCE:

- All Portions of the Existing Structure shall be Removed, Except for Piles at Bents #1 & #4. Bent #1 & #4 Piles shall be Cut to the Required Embedment Depth.

RIPRAP DRAINAGE TURNOUT QUANTITIES

	Bent #1	Bent #4
18" Revetment RipRap	19 Tons	15 Tons
Geotextiles	35 yd <sup>2</sup>	27 yd <sup>2</sup>
Sodding	9 yd <sup>2</sup>	10 yd <sup>2</sup>

W. 106th ST. OVER WILLIAMS CREEK  
CONTINUOUS COMPOSITE PRESTRESSED CONCRETE  
SPREAD BOX BEAM BRIDGE

3 SPANS @ 40'-0", 51'-2" & 40'-0"  
CLEAR ROADWAY: 30'-0"  
SKEW: 10° LT.

HAMILTON COUNTY, INDIANA

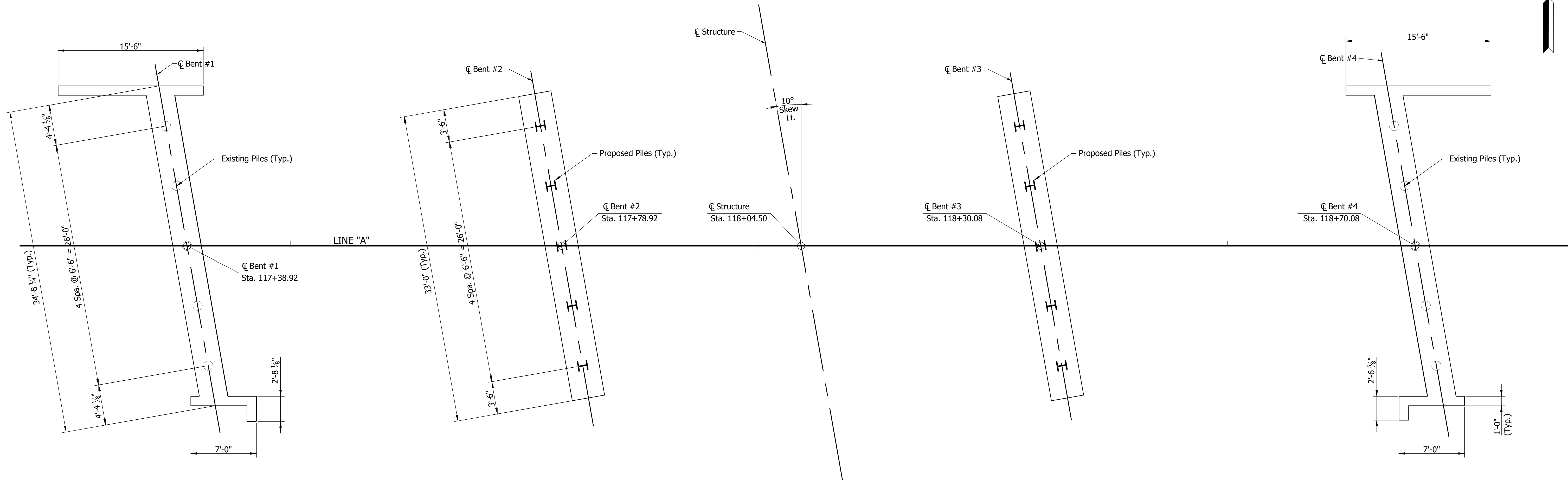
HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
1"=10'	----
SURVEY BOOK	SHEETS
-----	12 of 34
CONTRACT	PROJECT
----	PB-14-0012

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

GENERAL PLAN



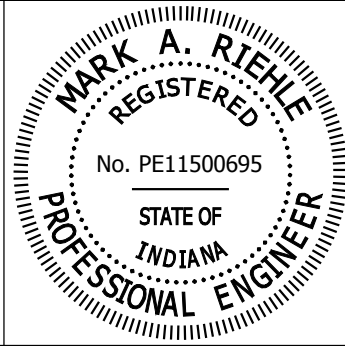
RECOMMENDED FOR APPROVAL	Mark A. Riendeau	03/02/2016
DESIGNED:	MAR	DRAWN: TAM
CHECKED:	CRF	CHECKED: MAR



PLAN VIEW

NOTE: Proposed Piles are HP 12x74. Piles Shall be Driven to Nominal Driving Resistance Shown on Table on Sheet 9.

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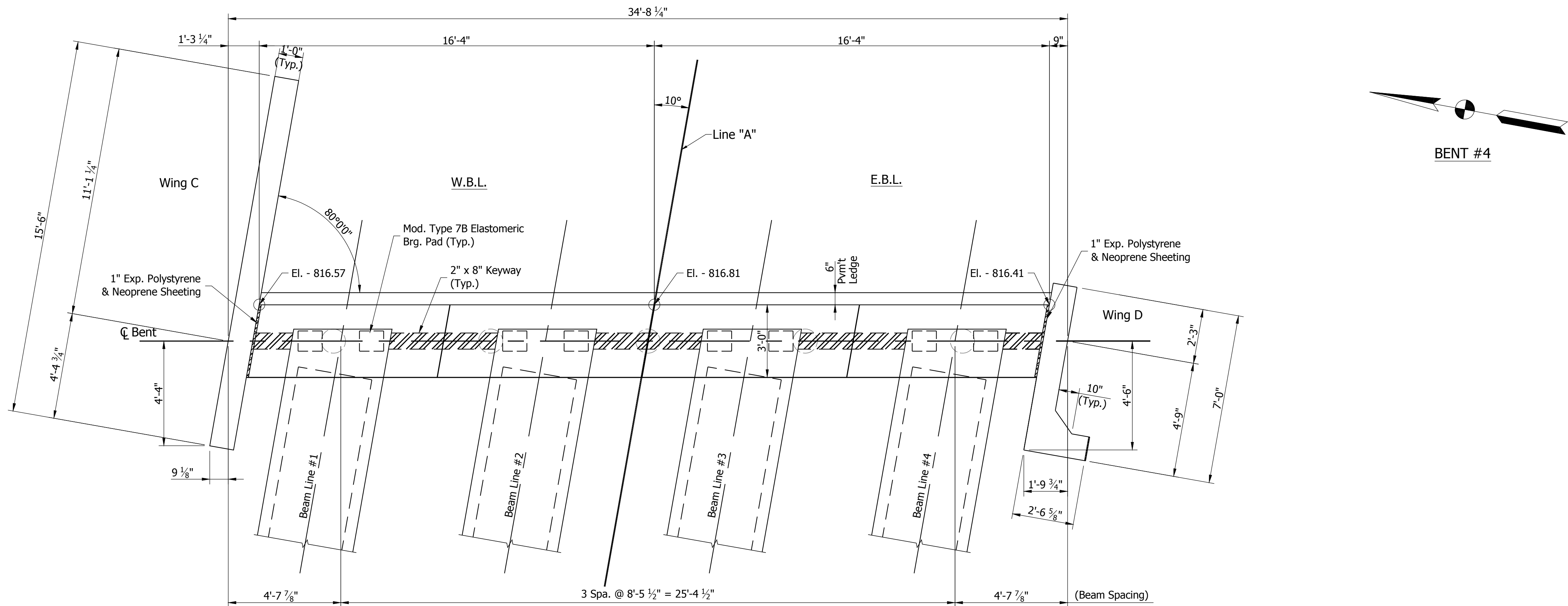


RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED:	ACS	DRAWN: TAM
CHECKED:	MAR	CHECKED: MAR

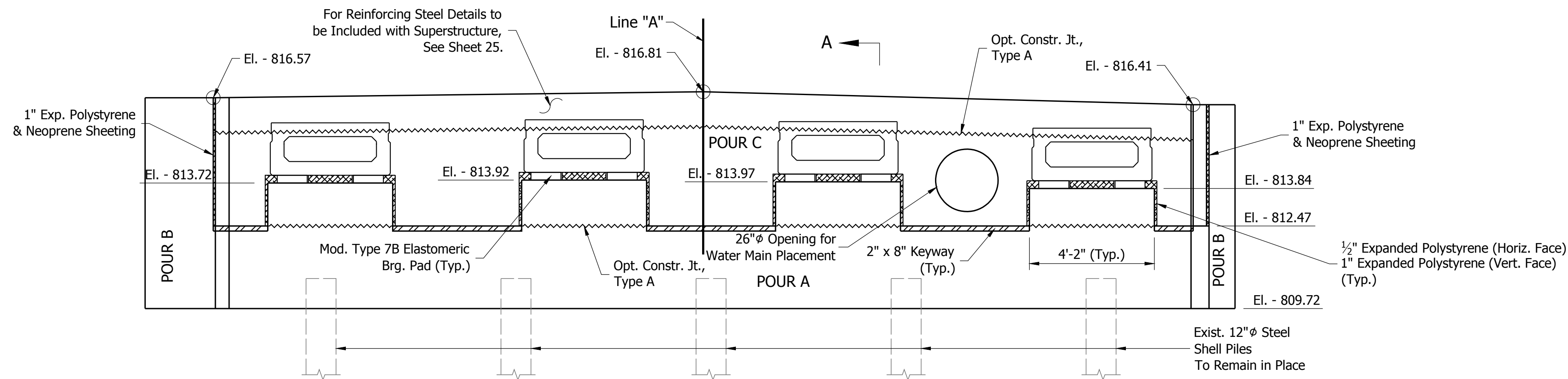
HAMILTON COUNTY HIGHWAY DEPARTMENT
FOUNDATION LAYOUT

HORIZONTAL SCALE 3/16"=1'-0"	BRIDGE FILE HAMILTON CO. BR. #35	
VERTICAL SCALE 3/16"=1'-0"	DESIGNATION ----	
SURVEY BOOK	SHEETS	
CONTRACT	13	of 34
----	PROJECT PB-14-0012	





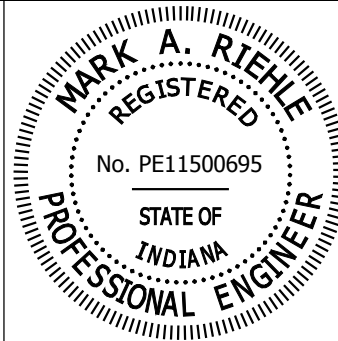
PLAN VIEW



ELEVATION VIEW

NOTE: For Section A-A, See Sheet 14.

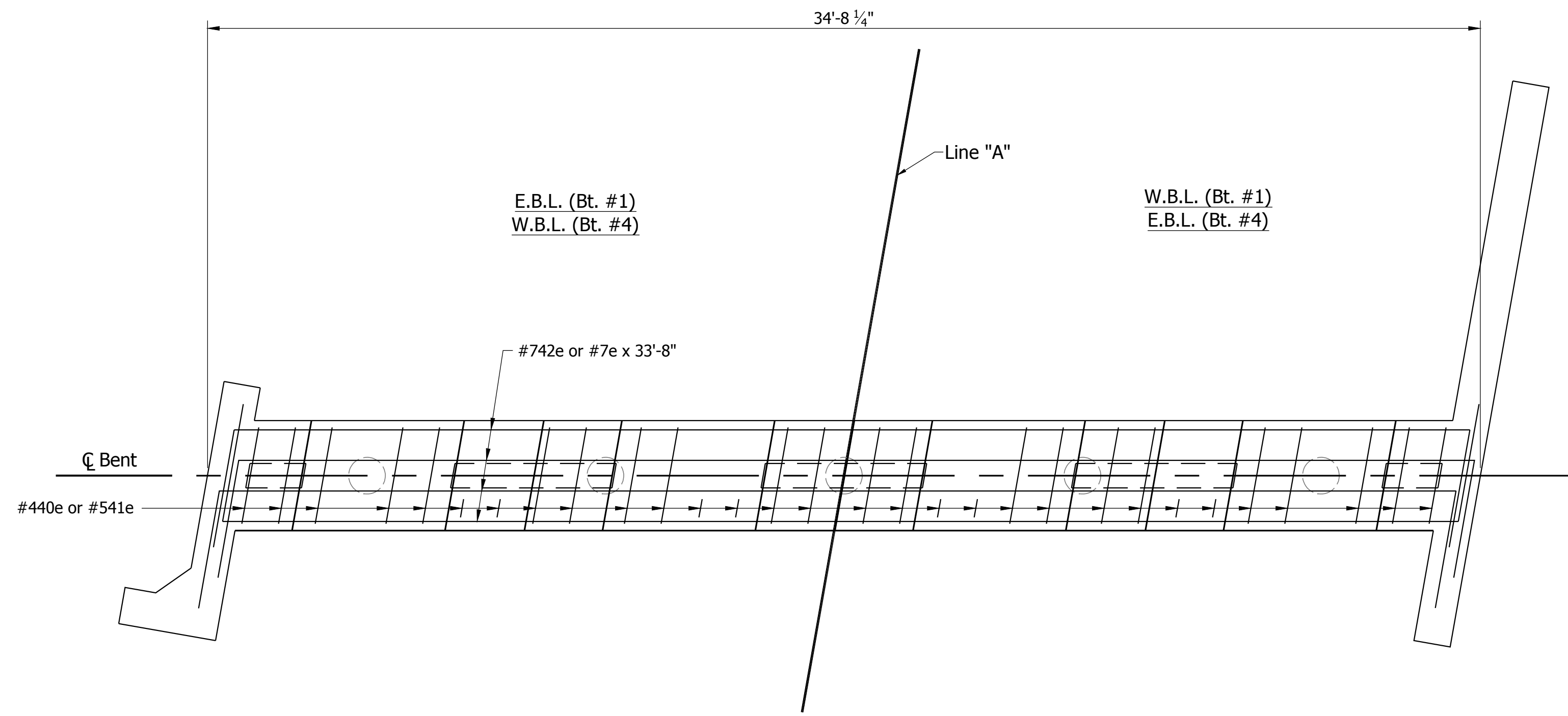
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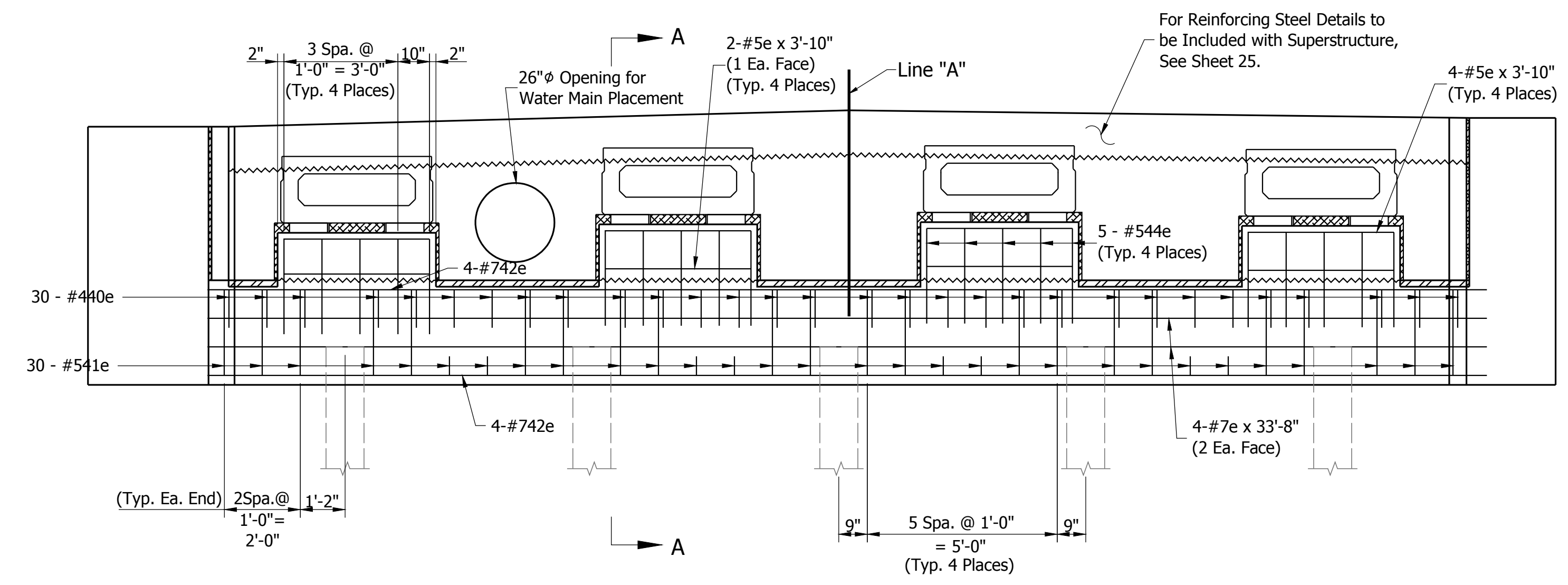
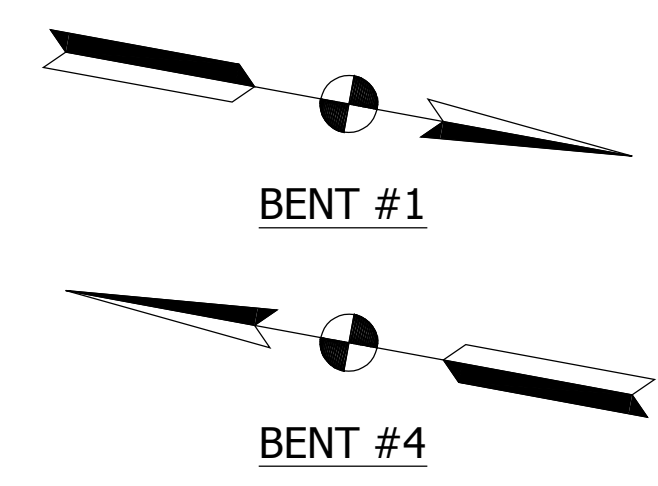
RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
DESIGNED:	ACS	DRAWN: TAM
CHECKED:	MAR	CHECKED: ACS

HAMILTON COUNTY HIGHWAY DEPARTMENT
END BENT #4 CONSTRUCTION

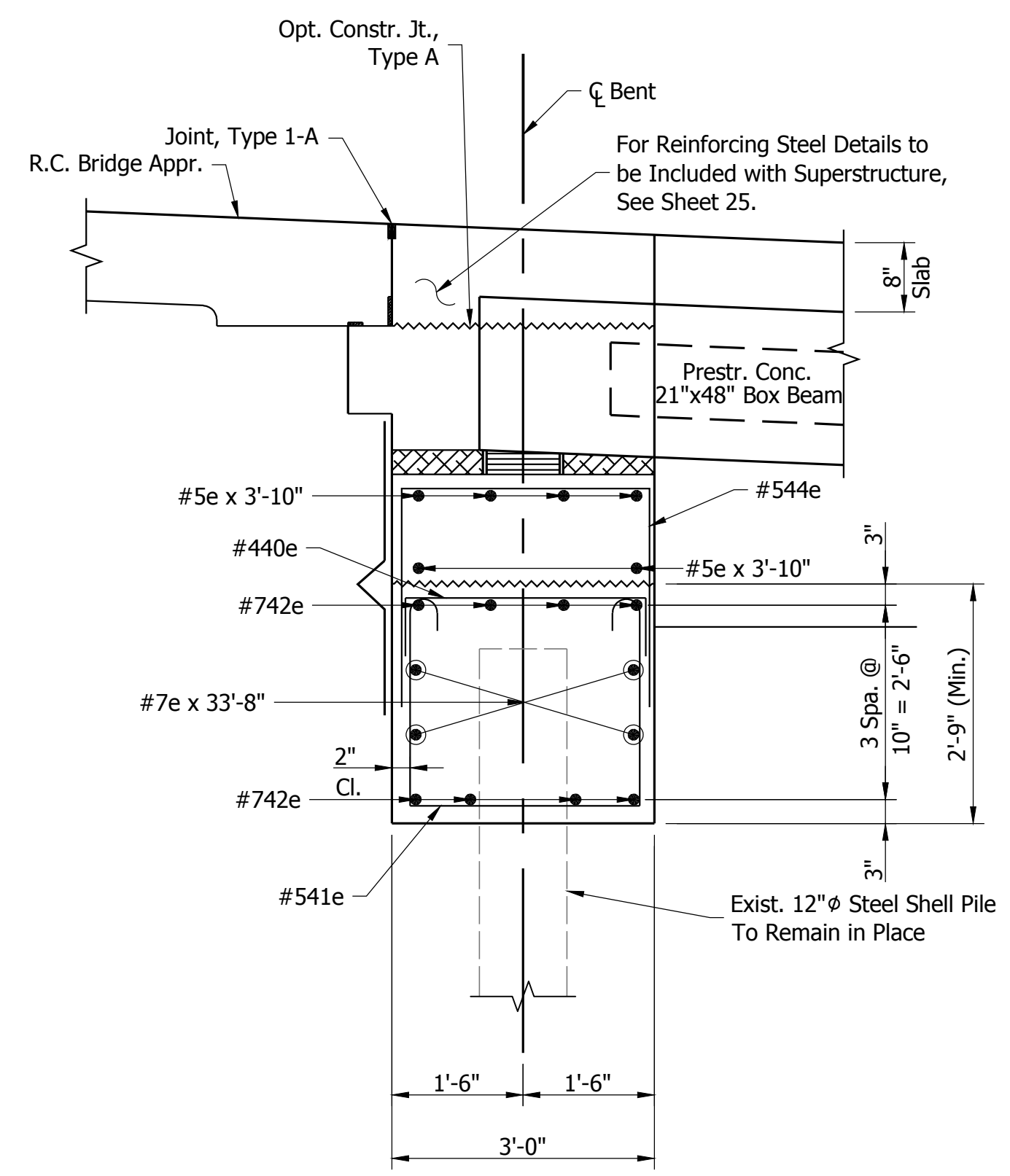
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VERTICAL SCALE 3/8"=1'-0"	DESIGNATION ----
SURVEY BOOK	SHEETS 15 of 34
CONTRACT ----	PROJECT PB-14-0012



CAP PLAN VIEW  
BENT #1 SHOWN, BENT #4 SIMILAR

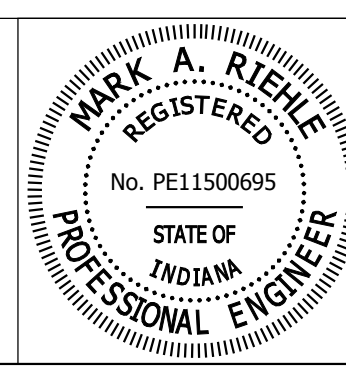


ELEVATION VIEW  
BENT #1 SHOWN, BENT #4 SIMILAR



SECTION A-A  
SCALE: 5/8" = 1'-0"

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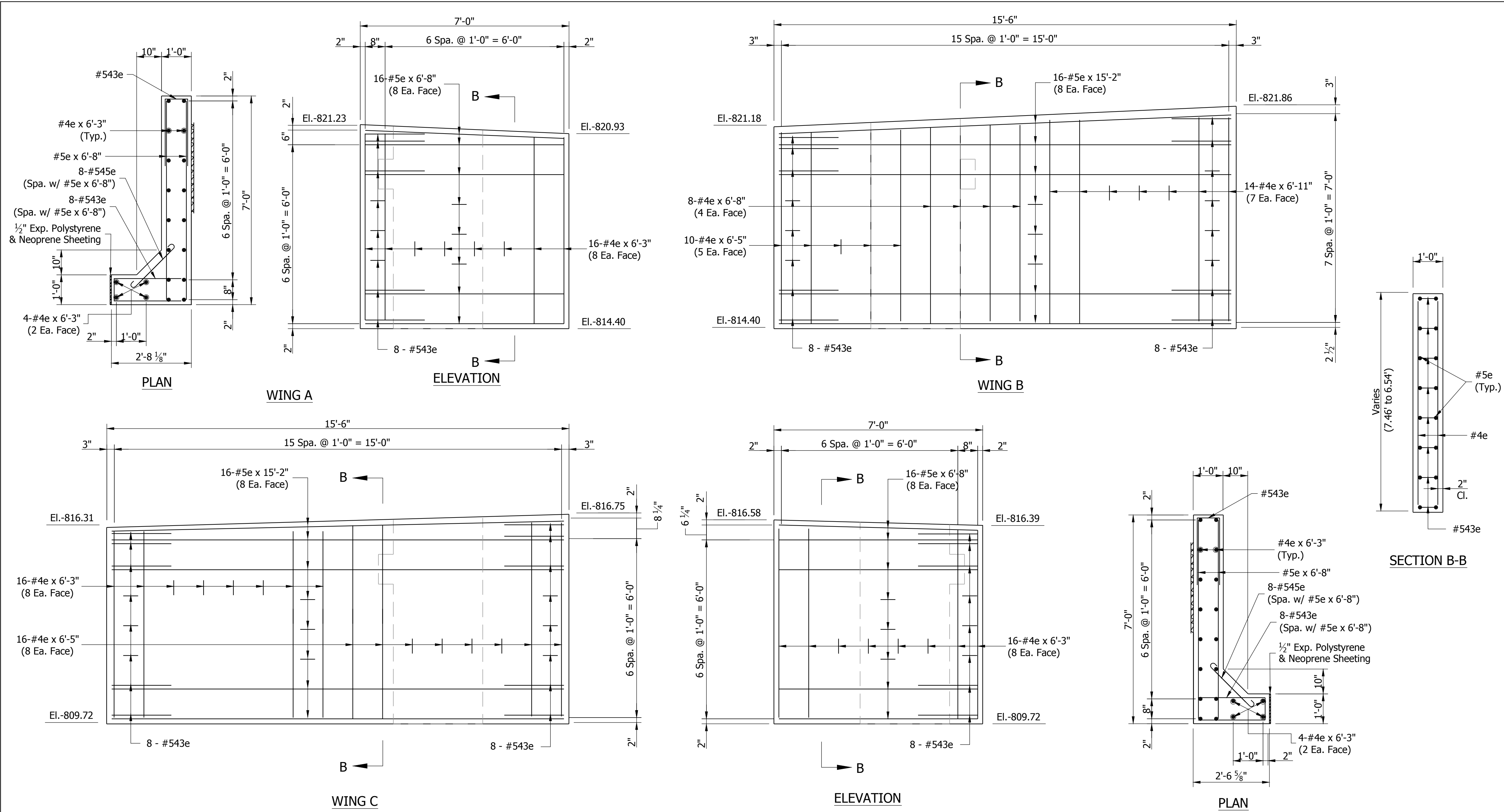


RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED:	ACS	DRAWN:
		TAM
CHECKED:	MAR	CHECKED:
		ACS

HAMILTON COUNTY HIGHWAY DEPARTMENT
END BENT #1 & #4 DETAILS

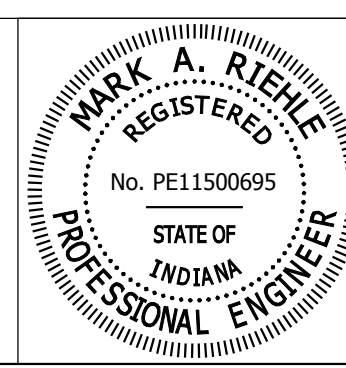
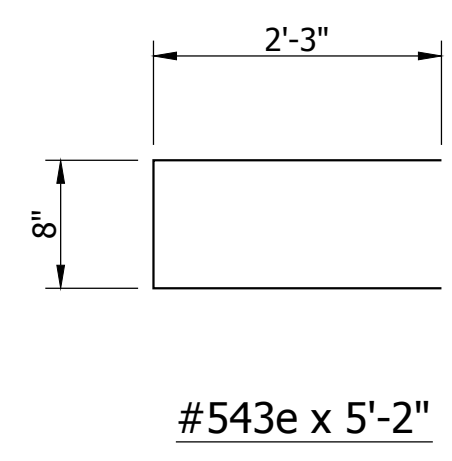
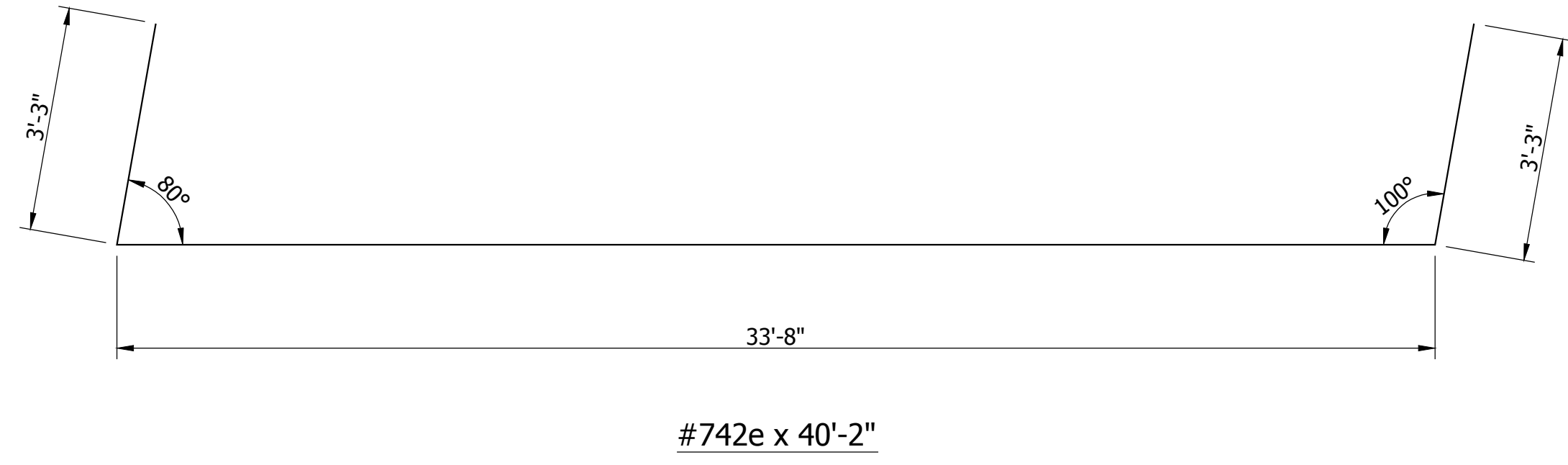
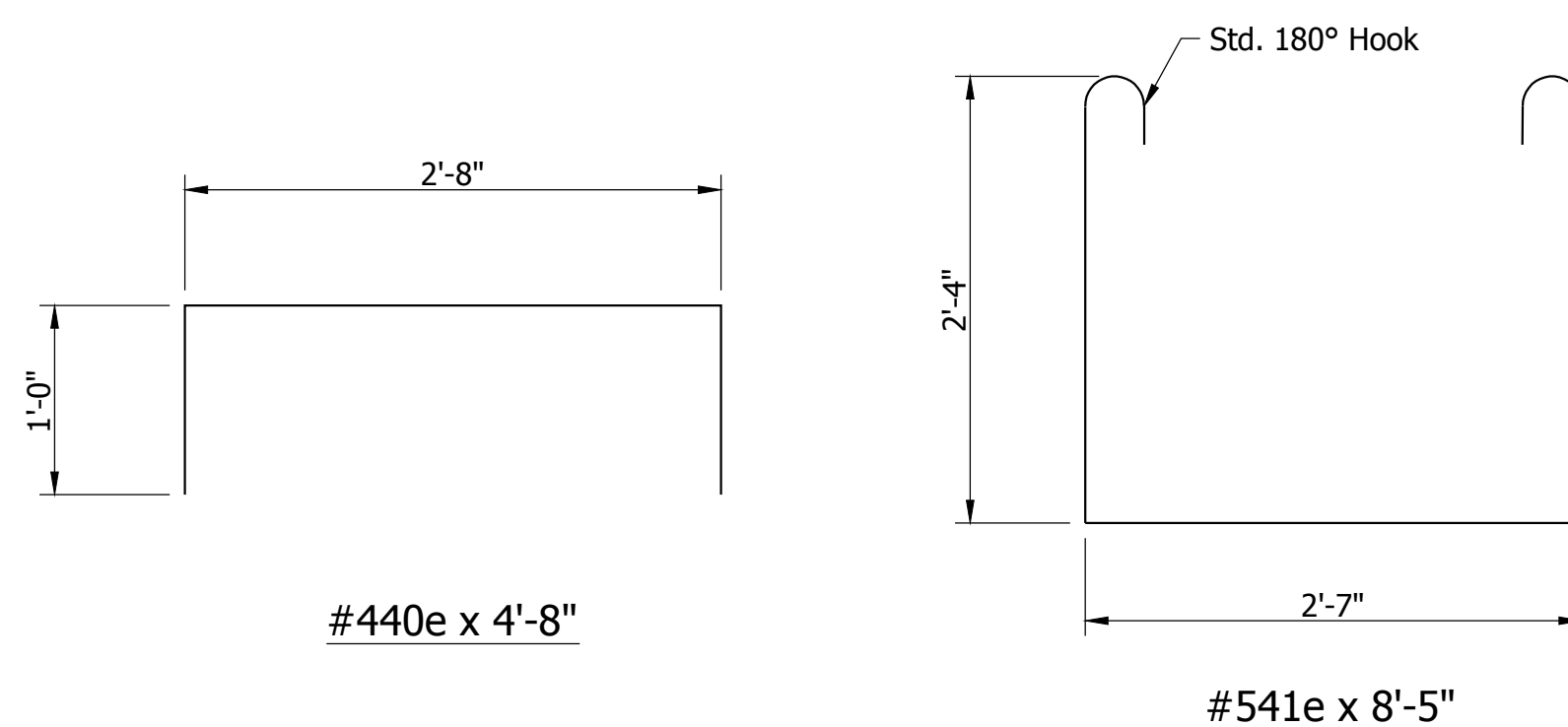
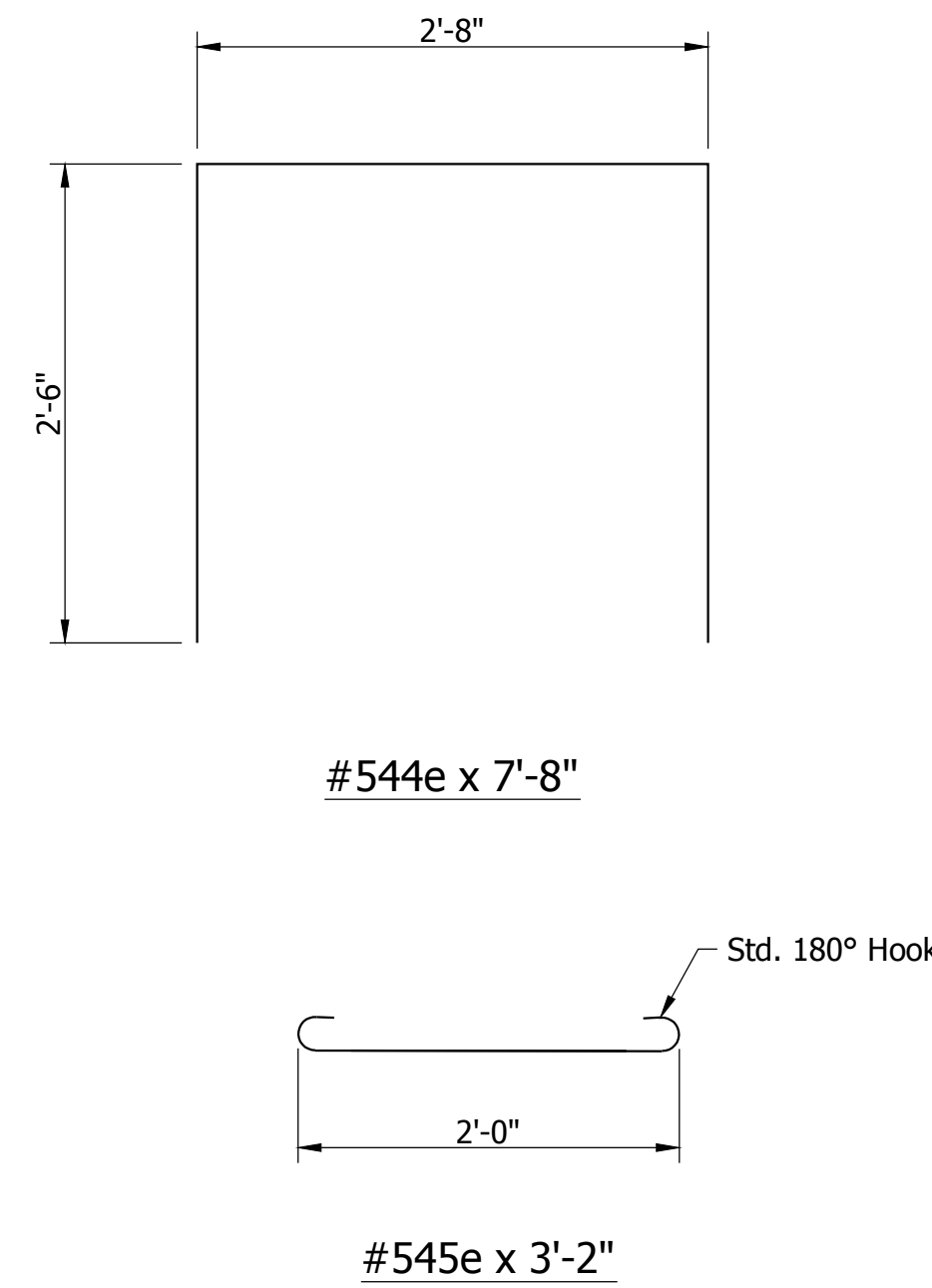
HORIZONTAL SCALE	BRIDGE FILE
3/8" = 1'-0"	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
3/8" = 1'-0"	----
SURVEY BOOK	SHEETS
	16 of 34
CONTRACT	PROJECT
----	PB-14-0012

Date: Mar 31, 2016, 8:37am User Name: vaughn  
File: S:\1213-0039\Bent\Bent Details\BENT\_DTLS.dwg



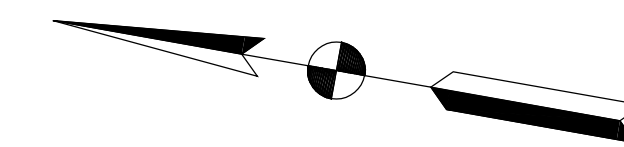
BILL OF MATERIALS				
END BENT #1 & #4				
REINFORCING STEEL				
SIZE & MARK	NO. OF BARS BENT #1	NO. OF BARS BENT #4	LENGTH	WEIGHT (Lbs.)
EPOXY COATED REINFORCING STEEL				
#742e	8	8	40'-2"	
#7e	4	4	33'-8"	
TOTAL #7e BARS:				1864
#545e	8	8	3'-2"	
#544e	20	20	7'-8"	
#543e	32	32	5'-2"	
#541e	30	30	8'-5"	
#5e	16	16	15'-2"	
#5e	16	16	6'-8"	
#5e	24	24	3'-10"	
TOTAL #5e BARS:				2165
#440e	30	30	4'-8"	
#4e	14	---	6'-11"	
#4e	8	---	6'-8"	
#4e	10	16	6'-5"	
#4e	20	36	6'-3"	
TOTAL #4e BARS:				633
TOTAL EPOXY COATED REINFORCING STEEL:				4662
CONCRETE				
Concrete Class A, Substructure				
		BENT #1	BENT #4	
Pour A		12.4 yd <sup>3</sup>	12.3 yd <sup>3</sup>	
Pour B		6.3 yd <sup>3</sup>	6.0 yd <sup>3</sup>	
TOTAL		18.7 yd <sup>3</sup>	18.3 yd <sup>3</sup>	

NOTE: Pour C Included w/ Superstructure



RECOMMENDED FOR APPROVAL	<u>Mark A. Riehl</u>	03/02/2016	
DESIGN ENGINEER		DATE	
DESIGNED: _____	ACS	DRAWN: _____	TAM
CHECKED: _____	MAR	CHECKED: _____	ACS

HAMILTON COUNTY HIGHWAY DEPARTMENT		HORIZONTAL SCALE 1/2" = 1'-0"	BRIDGE FILE HAMILTON CO. BR. #35
		VERTICAL SCALE 1/2" = 1'-0"	DESIGNATION ----
MISCELLANEOUS END BENT DETAILS		SURVEY BOOK	SHEETS
		CONTRACT	17 of 34
		----	PROJECT PB-14-0012



This diagram shows a cross-section of a pile cap and five steel piles. The pile cap is a large rectangular structure with a top surface labeled "POUR A". Above the cap, there are five rectangular elements labeled "El. - 'C'", "El. - 'D'", "El. - 'E'", and "El. - 'F'", with a gap between "D" and "E". A horizontal line "A" is shown above the cap. The piles are vertical rectangular structures below the cap, labeled "5 - HP 12x74 Steel Piles". A dimension of "12'-0\" is shown for the height of the cap above the piles. A dimension of "3'-9\" x 8\" x 2\" Keyway (Typ.)" is shown for the keyway in the cap. A dimension of "4'-2\" (Typ.)" is shown for the width of the cap. A dimension of "2'-0\" (Typ.)" is shown for the width of the piles. A dimension of "Opt. Constr. Jt., Type A" is shown for the joint between the cap and the piles. A dimension of "Line 'A'" is shown for the vertical line passing through the center of the piles.

3'-6"

1'-9" 1'-9"

C Bent

8" x 2" Keyway

Opt. Constr. Jt., Type A

1'-3" (Min.)

3'-0"

2'-0"

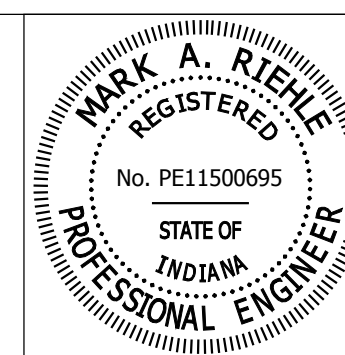
12'-0" (Piles, Steel H, Reinforced Encased HP 12x74)

2'-0"  $\phi$  (Typ.)

HP 12x74 Steel Piles

INTERIOR BENT ELEVATIONS		
ELEV.	BENT #2	BENT #3
A	812.45	810.63
B	815.45	813.63
C	816.88	815.03
D	816.99	815.15
E	816.93	815.10
F	816.71	814.88

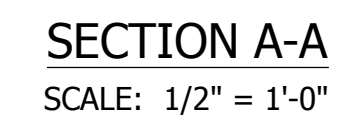
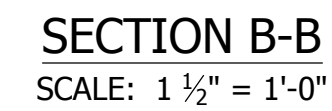
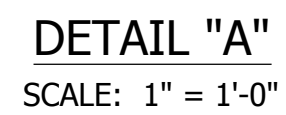
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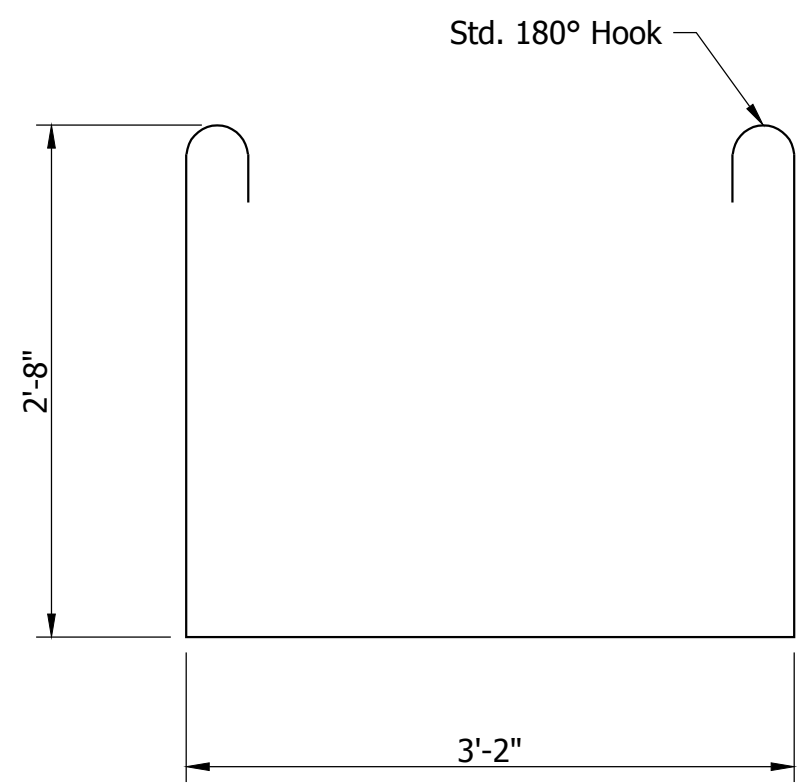
RECOMMENDED FOR APPROVAL	<i>Mark A. Kondo</i>		03/02/2016
	DESIGN ENGINEER		DATE
DESIGNED: _____	ACS	DRAWN: _____	VCH
CHECKED: _____	MAR	CHECKED: _____	ACS

## INTERIOR BENT #2 & #3 CONSTRUCTION

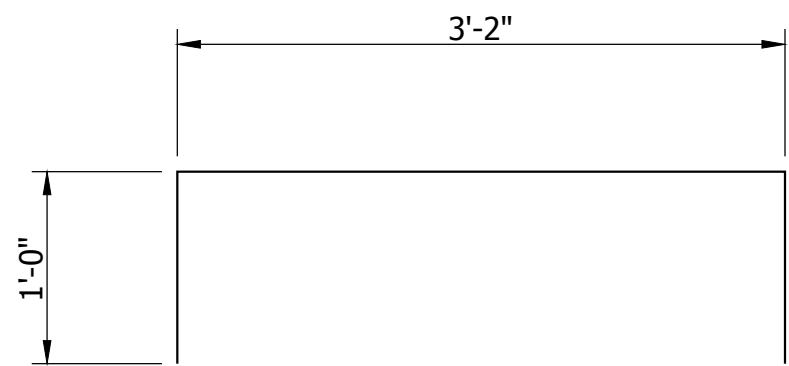
HORIZONTAL SCALE 3/8"=1'-0"	BRIDGE FILE HAMILTON CO. BR. #35	
VERTICAL SCALE 3/8"=1'-0"	DESIGNATION ----	
SURVEY BOOK	SHEETS	
CONTRACT	18	of 34
----	PROJECT PB-14-0012	



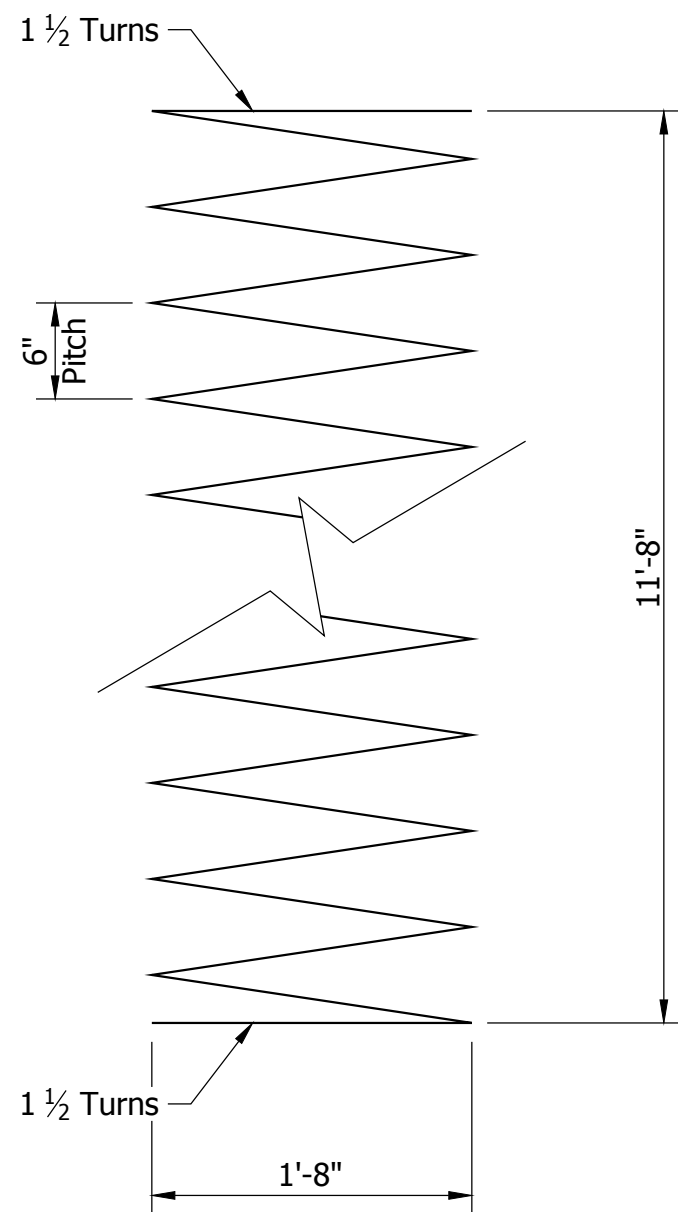
NOTE: For Additional Details, See INDOT  
Std. Dwg. 701-BPIL-01.



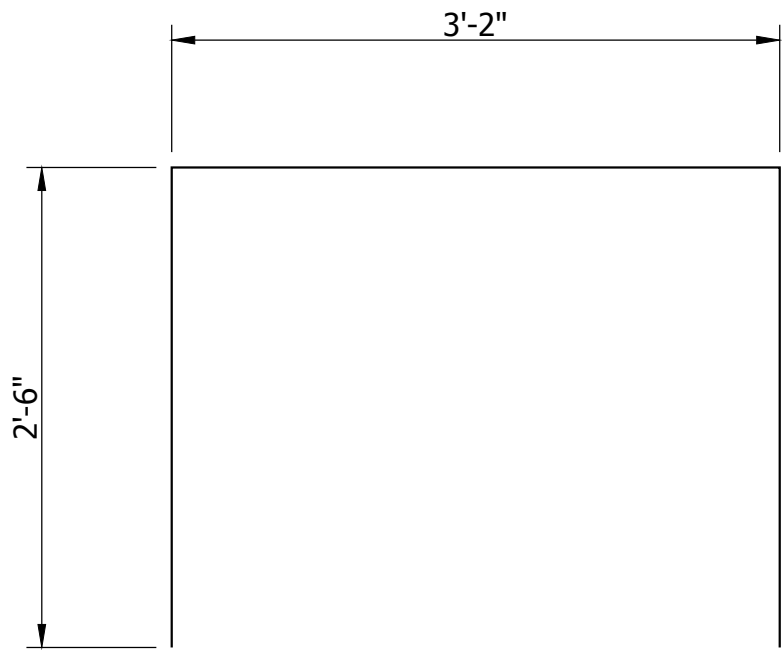
#550 x 9'-8"



#451 x 5'-2"



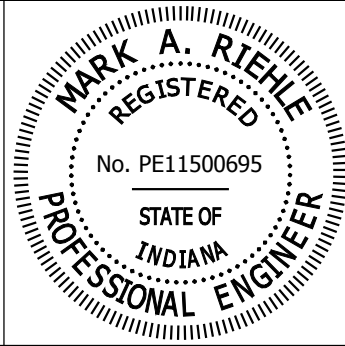
#3 Spiral Bar x 137'-11"



#554 x 8'-2"

BILL OF MATERIALS			
BENT #2 OR BENT #3			
REINFORCING STEEL			
SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (Lbs.)
PLAIN REINFORCING STEEL			
#7	13	32'-8"	
TOTAL #7 BARS:			868
#554	20	8'-2"	
#550	32	9'-8"	
#5	28	3'-10"	
TOTAL #5 BARS:			605
#451	32	5'-2"	
TOTAL #4e BARS:			110
TOTAL PLAIN REINFORCING STEEL:			1583
CONCRETE			
Concrete Class A, Substructure			
Pour A			15.9 yd <sup>3</sup>
MISCELLANEOUS			
		BENT #2	BENT #3
Pile, Steel H, HP 12x74			
5 Piles @ 41ft.		205 Lft.	---
5 Piles @ 51ft.		---	255 Lft.
Steel H Piles, Reinforced Conc. Encased, HP 12x74			
5 Piles @ 12ft.		60 Lft.	60 Lft.
Pile Shoes, HP, 12x74		5 Ea.	5 Ea.

Date: Mar 31, 2016, 8:37am User Name: vaughn  
File: S:\213-0039\Bridg\CAD\Plans\Int\_Bent\_Details.dwg



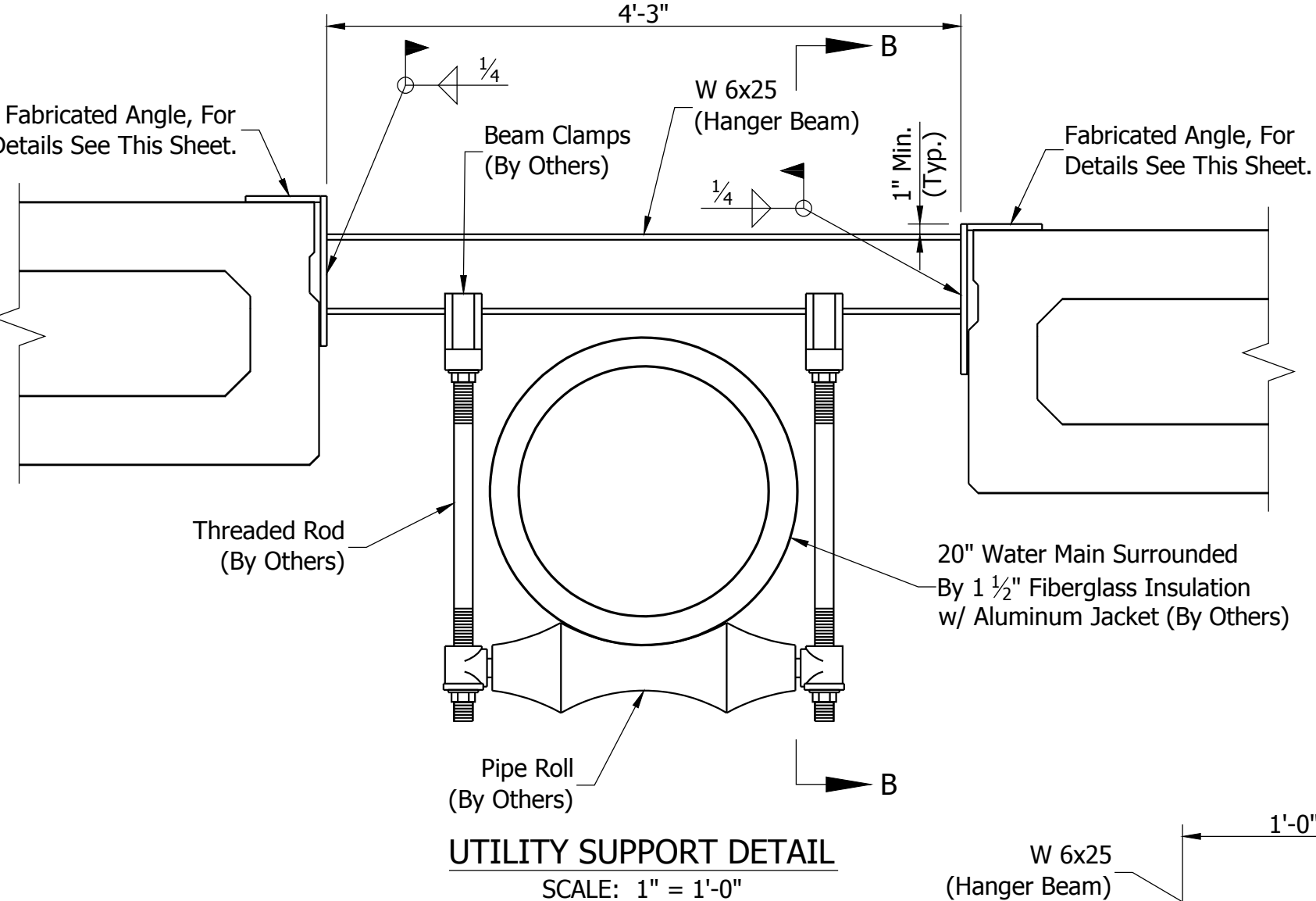
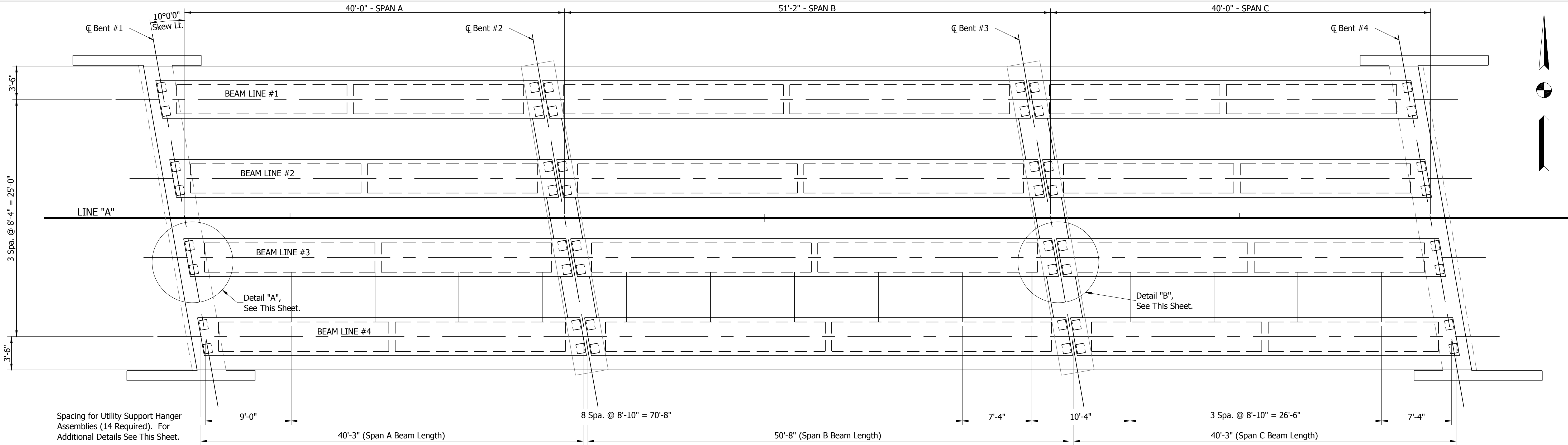
RECOMMENDED FOR APPROVAL <i>Mark A. Riehle</i> 03/02/2016 DESIGN ENGINEER DATE	
DESIGNED: ACS	DRAWN: VCH
CHECKED: MAR	CHECKED: ACS

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

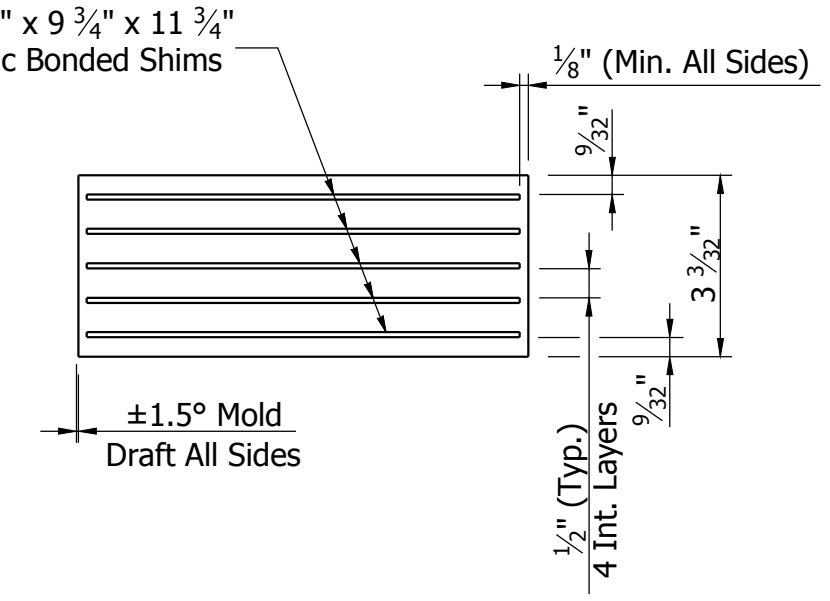
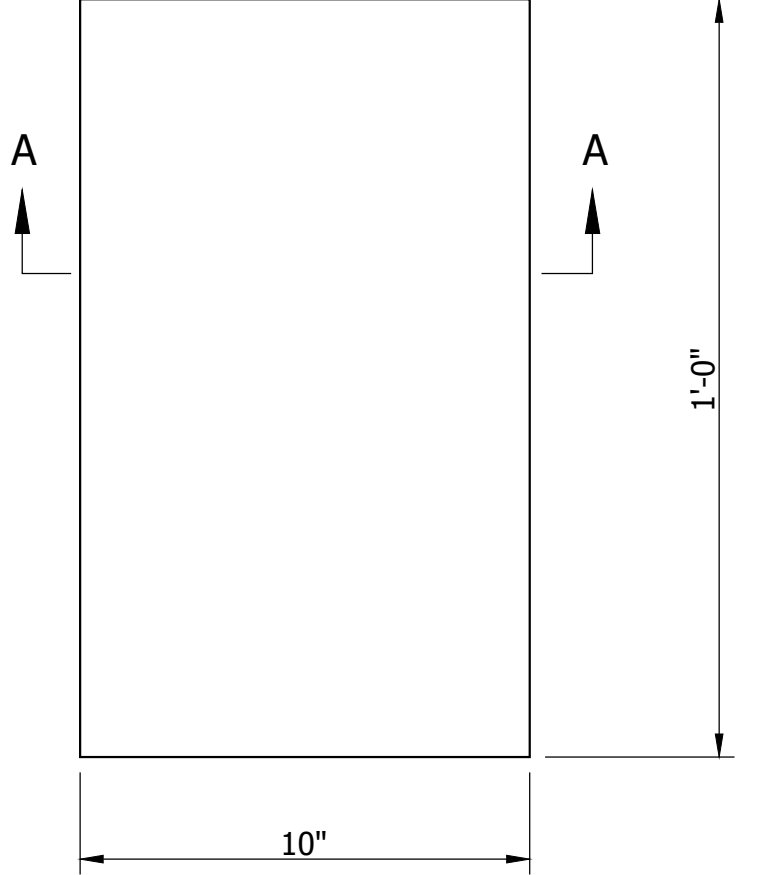
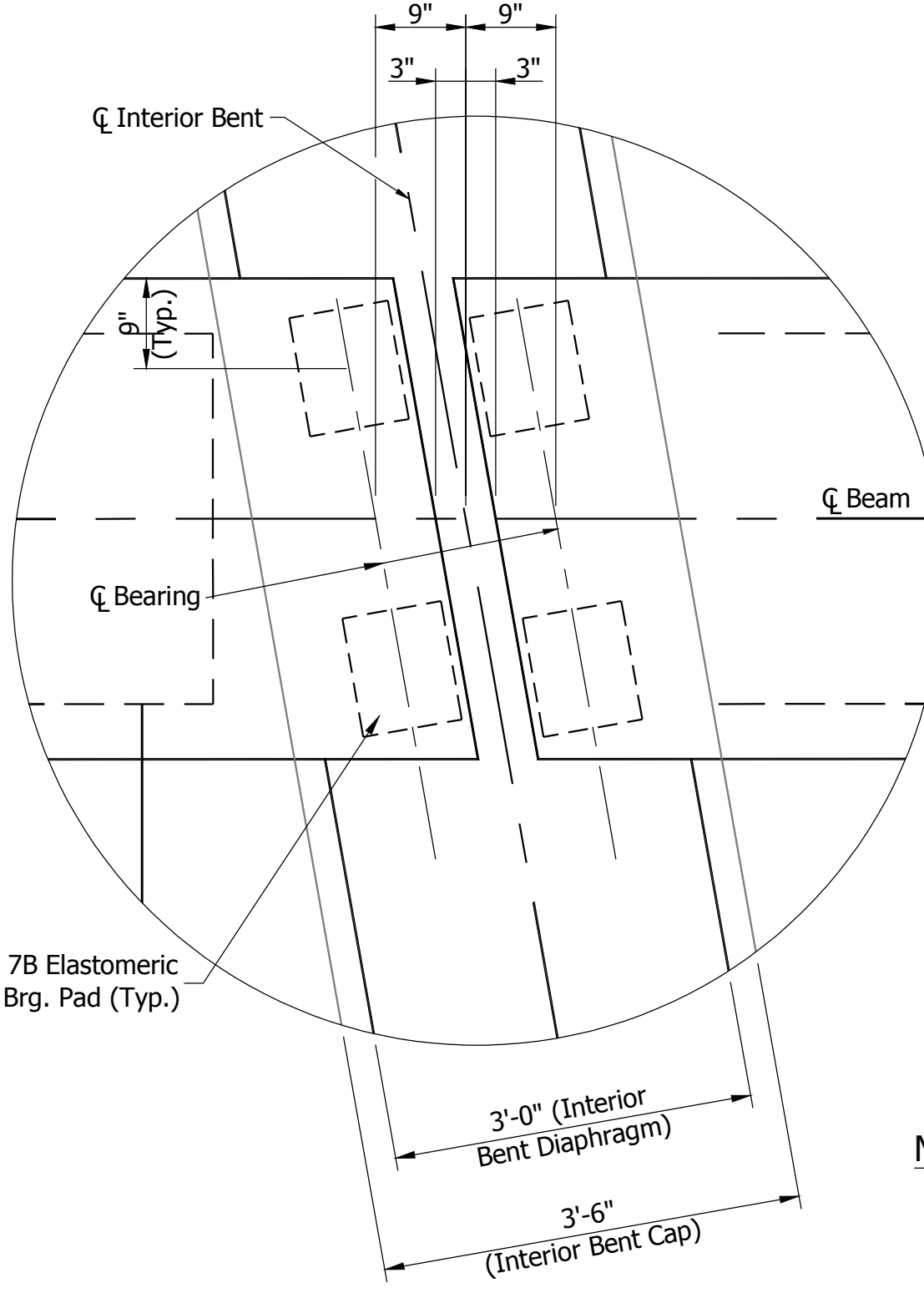
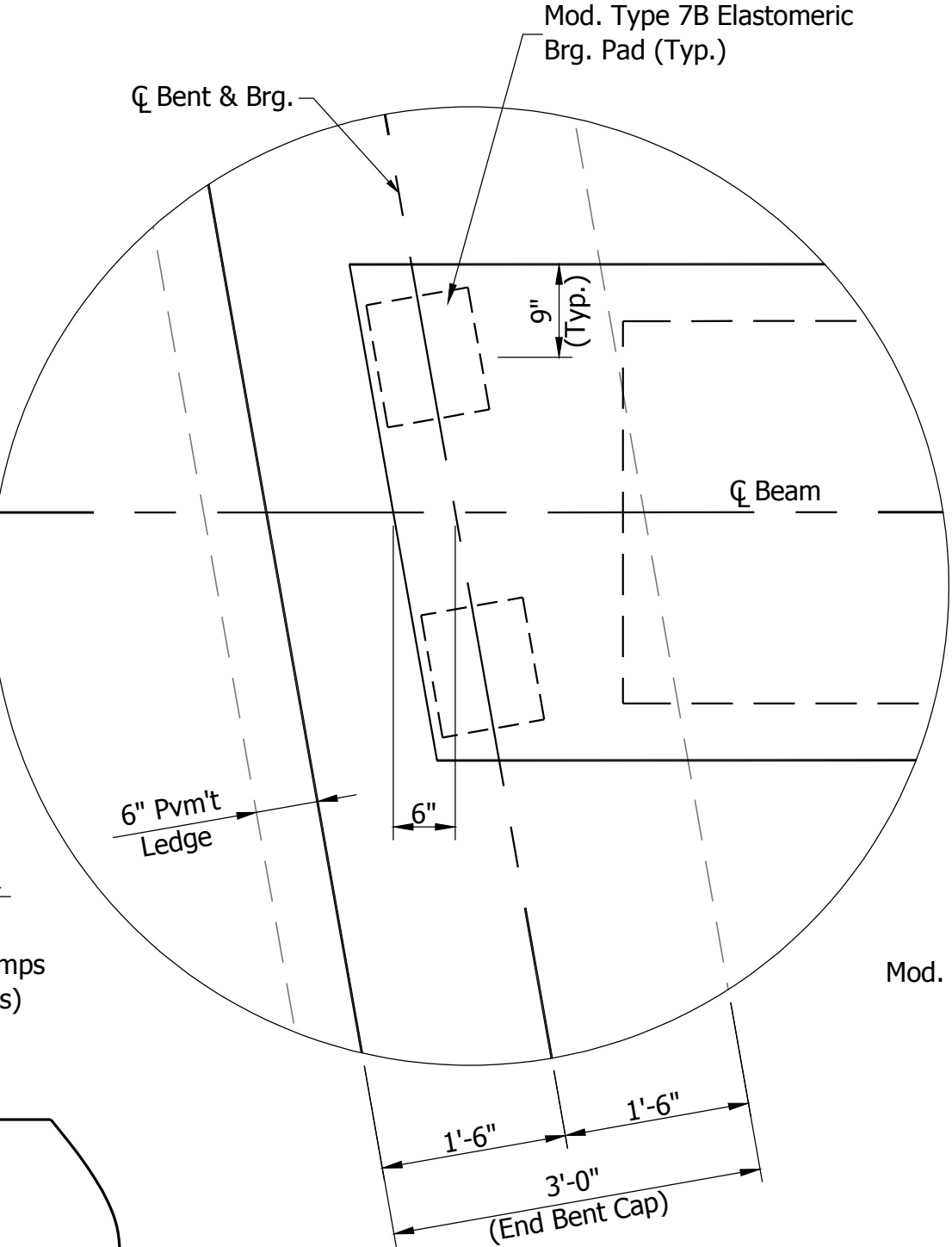
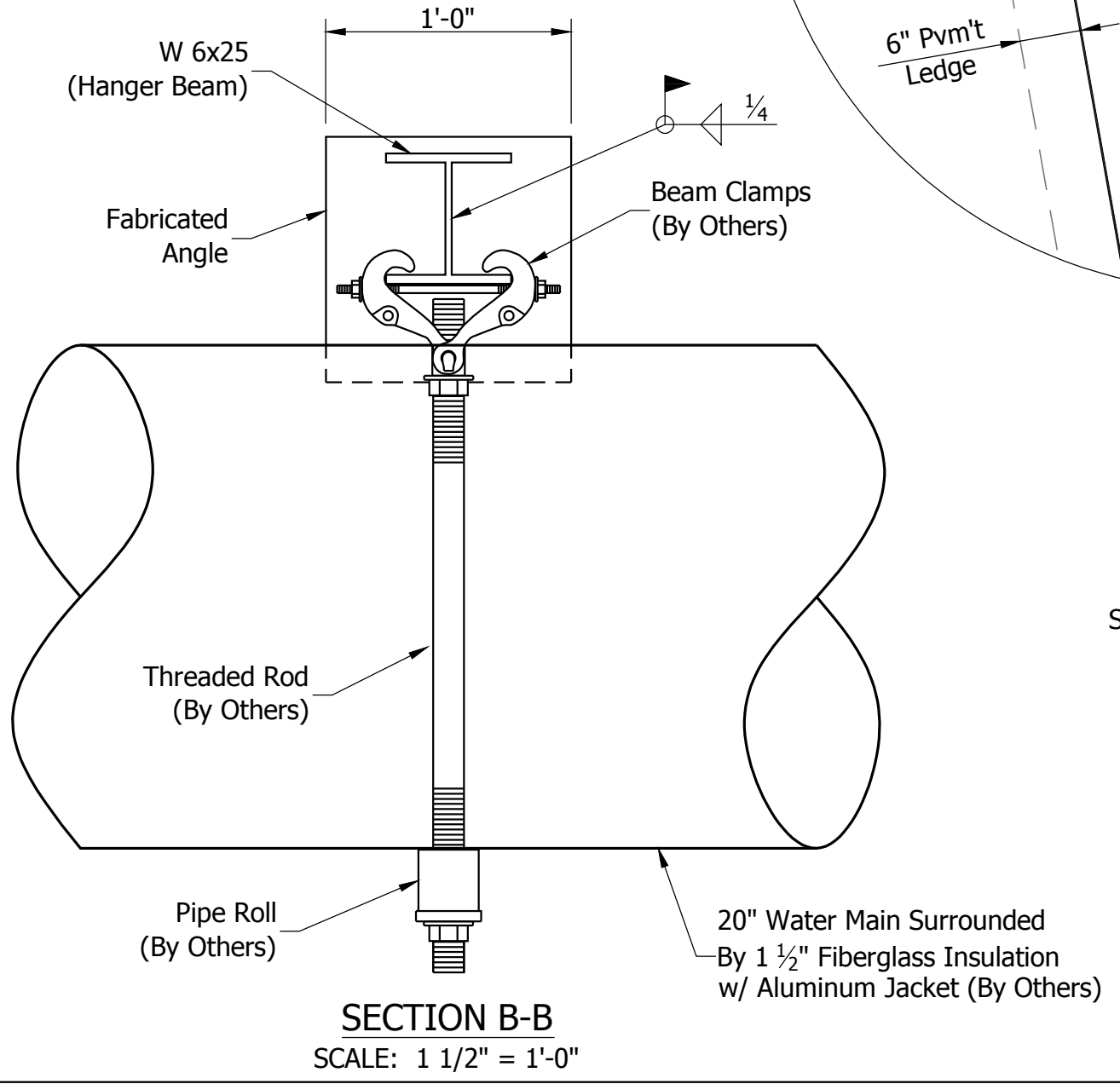
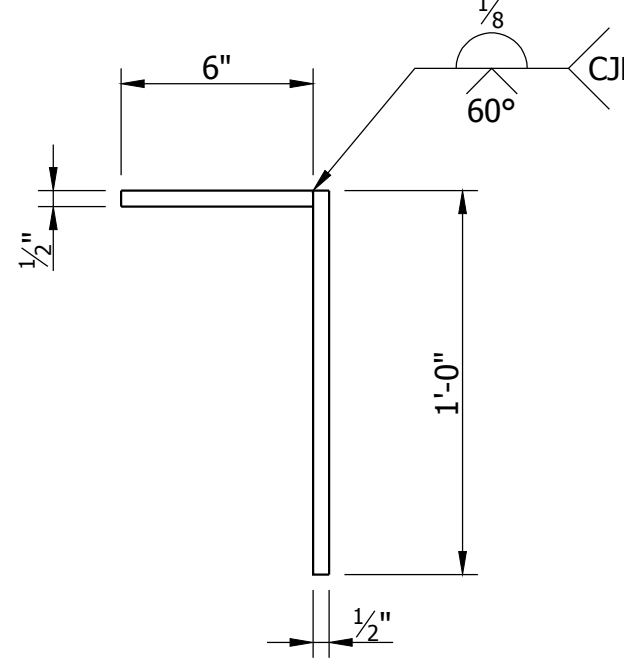
INTERIOR BENT #2 & #3 DETAILS

HORIZONTAL SCALE		BRIDGE FILE	
NOT TO SCALE		HAMILTON CO. BR. #35	
VERTICAL SCALE		DESIGNATION	
NOT TO SCALE		----	
SURVEY BOOK		SHEETS	
		20	of 34
CONTRACT		PROJECT	
----		PB-14-0012	

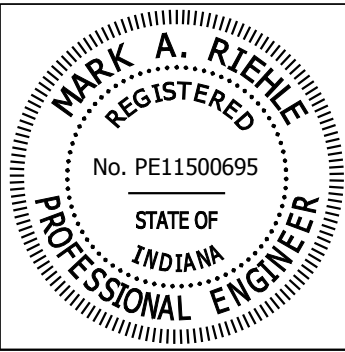
Date: Mar 31, 2016, 8:38am User Name: vaughn  
File: S:\213-0039\bridge\CAD\Plans\Frame.dwg



NOTE: All Structural Steel To Be AASHTO M270 Grade 50.  
All Structural Steel to be Painted Black (Color No. 17038).



Durometer Value = 60

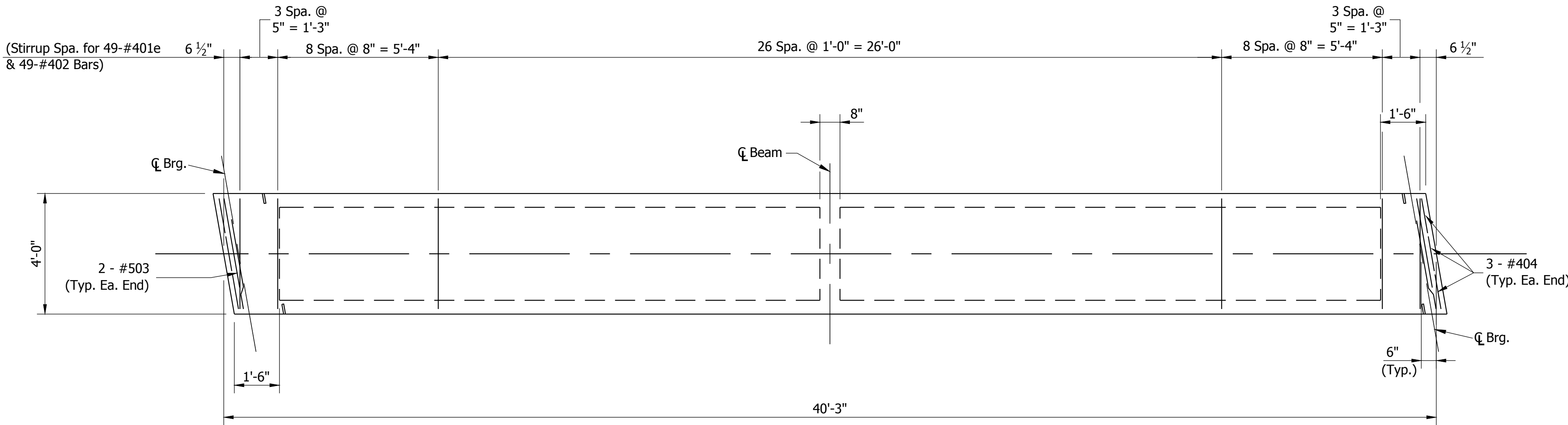


RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	DESIGN ENGINEER	03/02/2016	DATE
DESIGNED:	MAR	DRAWN:	TAM	
CHECKED:	KJC	CHECKED:	MAR	

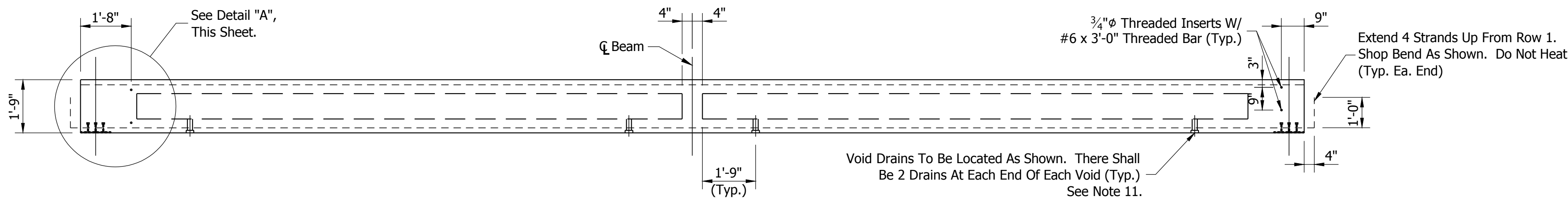
HAMILTON COUNTY  
HIGHWAY DEPARTMENT

FRAMING PLAN

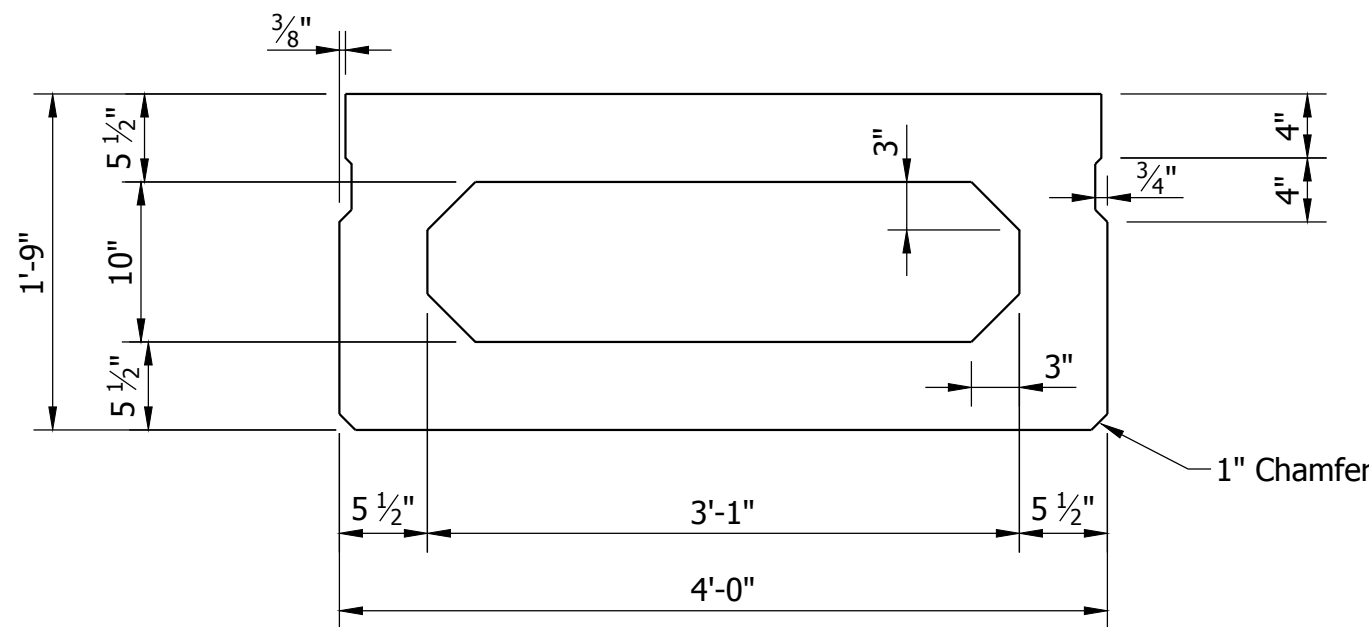
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3/16"=1'-0"	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
3/16"=1'-0"	----
SURVEY BOOK	SHEETS
	21 of 34
CONTRACT	PROJECT
----	PB-14-0012



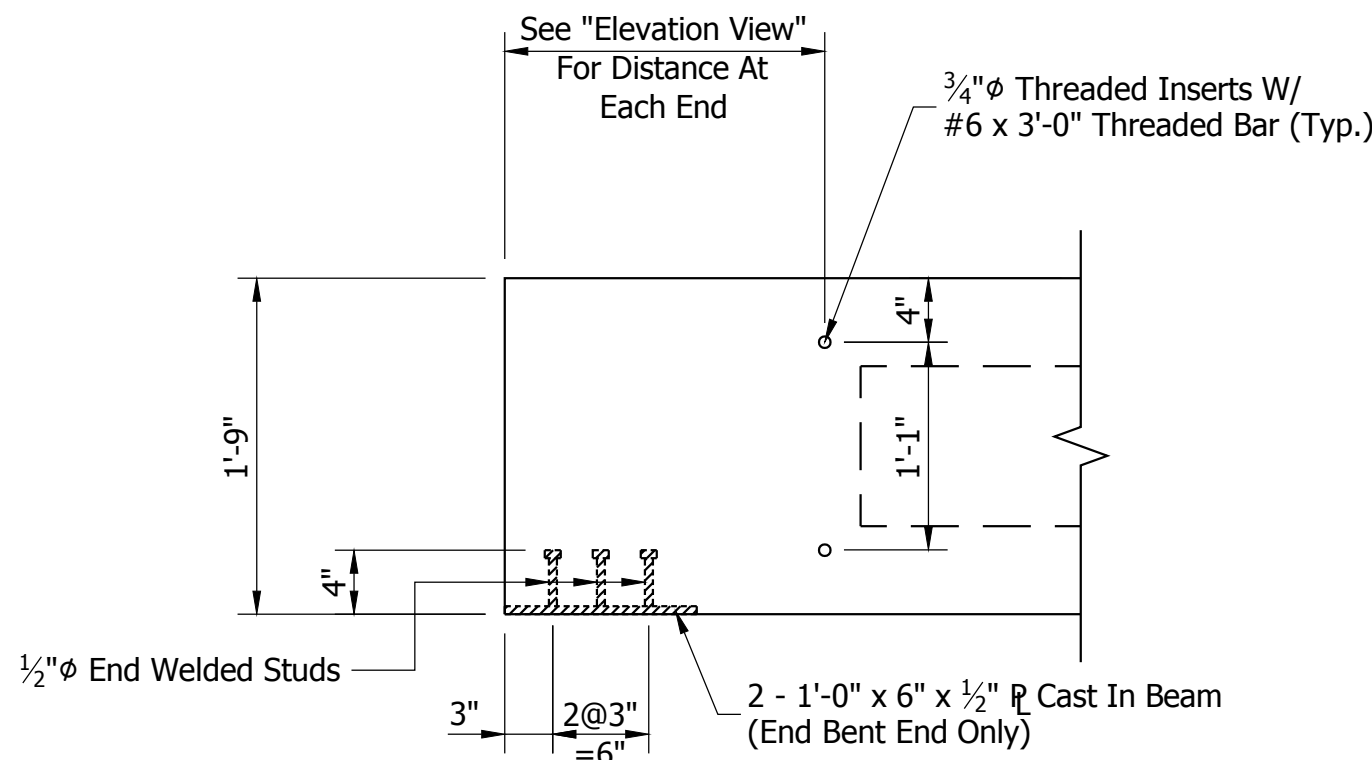
PLAN VIEW  
(SPAN A OR C)  
NOT TO SCALE



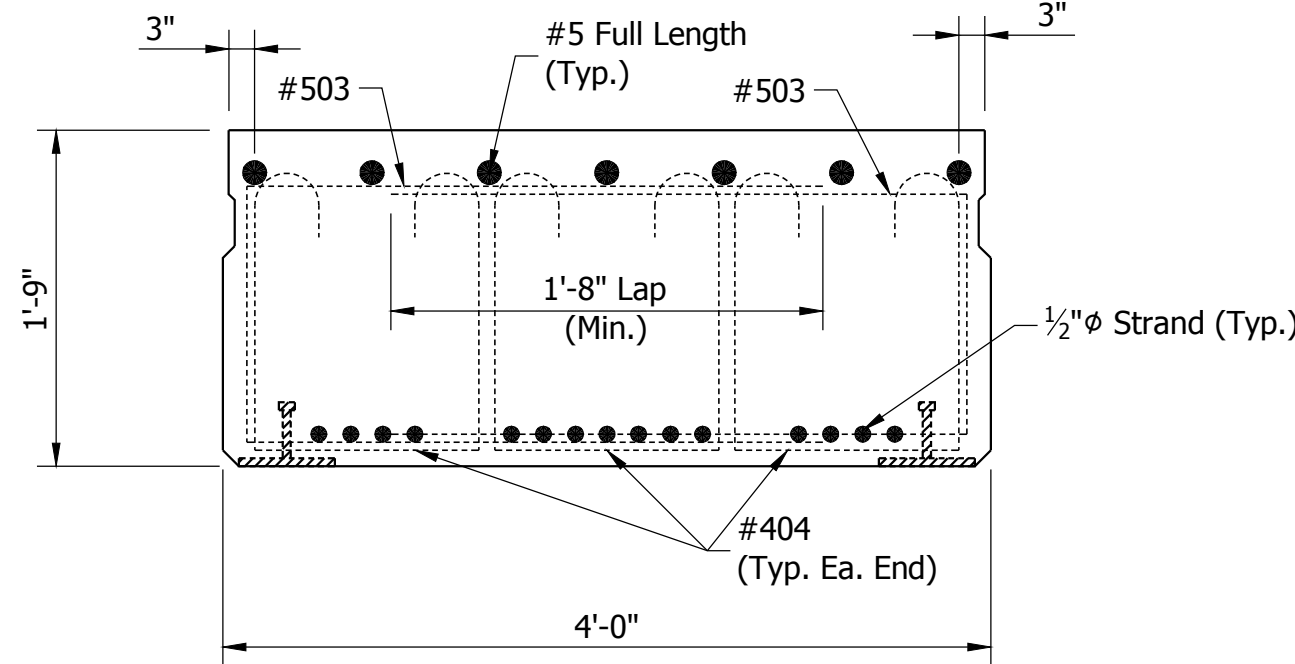
ELEVATION VIEW  
(SPAN A OR C)  
NOT TO SCALE



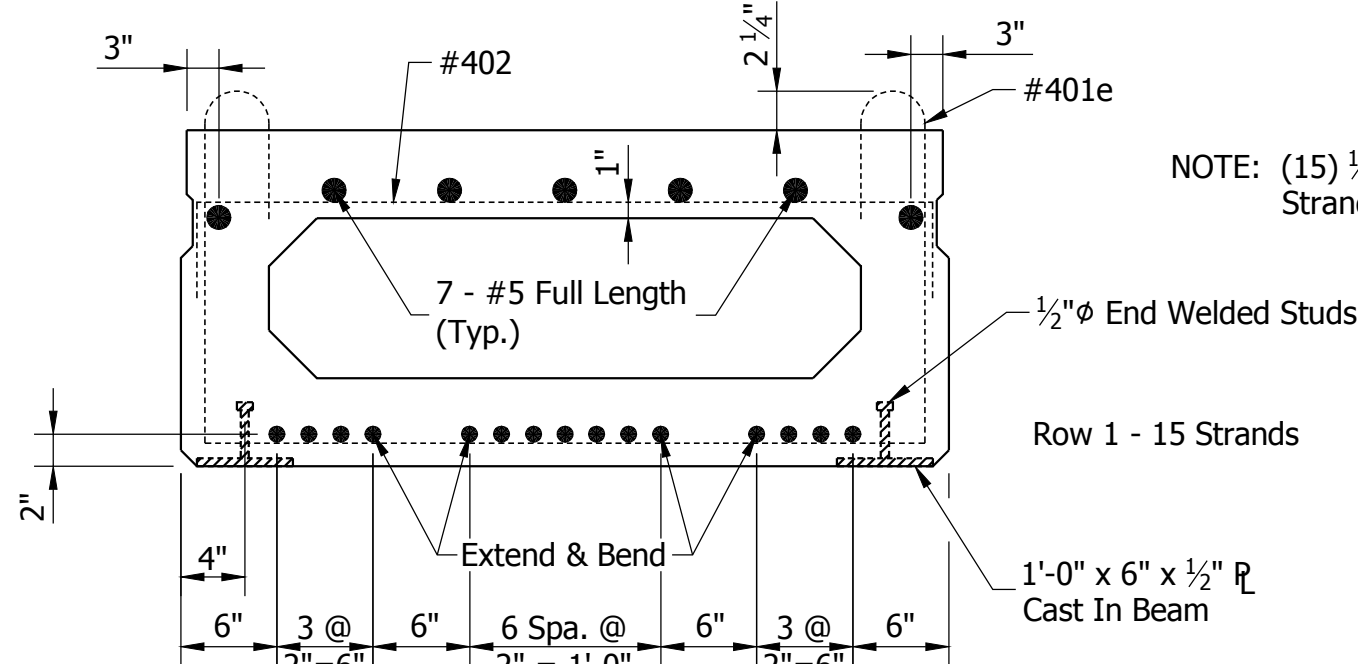
TYPICAL BEAM SECTION  
SCALE: 1" = 1'-0"



DETAIL "A"  
SCALE: 1" = 1'-0"

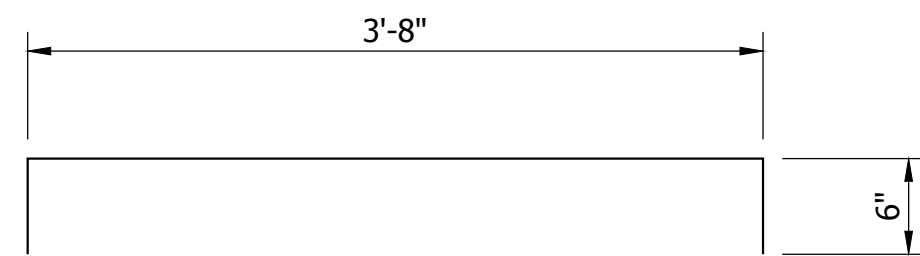


TYPICAL BEAM SECTION @ END  
SCALE: 1" = 1'-0"

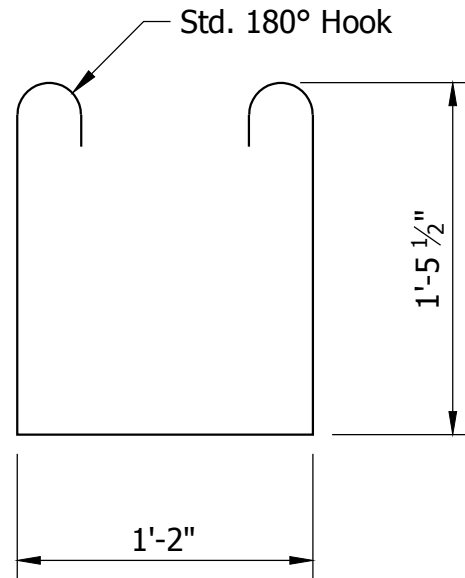


STIRRUP DETAIL  
SCALE: 1" = 1'-0"

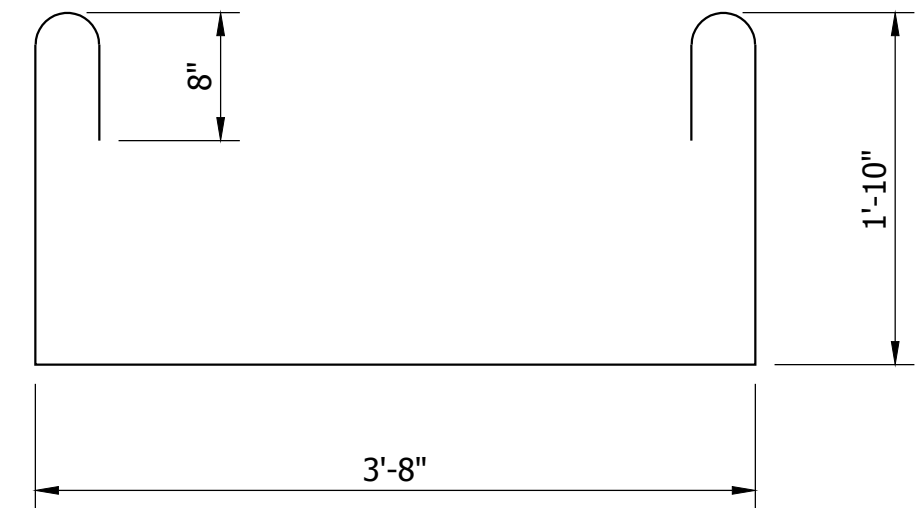
NOTE: (15) 1/2" 7 Wire Special Lo-Lax Strands Spaced At 2".



#402 x 4'-8"



#404 x 5'-1"



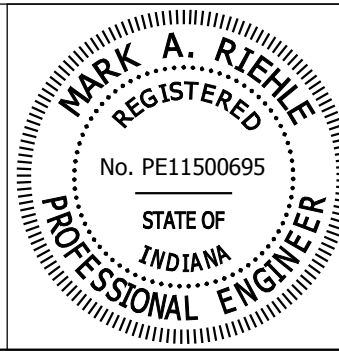
#401e x 9'-0"

NOTES

- Indicates 1/2"  $\phi$ -270ksi - 7 wire special lo-lax strand. Area = 0.167 in <sup>2</sup>
- 1/2"  $\phi$  Strands to be pulled to 33818 lbs. each.
- Minimum strength of concrete at time of prestressing = 6000 psi.
- Concrete in beams to be 7000 psi at 28 days.
- Reinforcing bars shall be 60ksi yield.
- For reinforcing bar notes see Bridge Std. 703-BRST-01.
- Deflections at Midspan in Inches  
(Negative Numbers Denote Downward Deflection)

	Span A or C	Span B
Prestress	= 0.750	1.794
Beam	= -0.251	-0.629
Initial Beam Camber	= 0.499	1.165
*Anticipated Beam Camber at Erection	= 0.873	2.039
Slab + Diaphragm	= -0.328	-0.839
Barrier	= -0.005	-0.008
Residual Camber	= 0.540	1.192
LL + Impact	= -0.169	-0.267
TOTAL	= 0.371	0.925

\* 1.75 times the Initial Beam Camber to account for the loss of prestress and the creep effect.
- The beams shall be cast a minimum of 28 days before deck is poured.
- Bent #1 & #4 to have Semi-Integral Caps.
- Tops and ends of all beams and exterior face of fascia beams to be sealed by Beam Fabricator.
- 3"  $\phi$  Hole to be cast in each beam at locations shown on plans. Hardware cloth to be epoxied to each face to cover hole to prevent bird nesting. Minimum opening of mesh equal to 1/4".
- For Tolerances of Prestressed Beams See Stds. 707-BPBF-01 & 707-BPBF-04.
- Reinforcing Bars Designated "e" shall be epoxy coated.
- Beams are to be supported at bearing points while stored and while in transport to job site.
- Top surface of beams shall be clean & free of laitance and be intentionally roughened to a full amplitude of approximately 1/4" according to the AASHTO LRFD Standard Specifications.

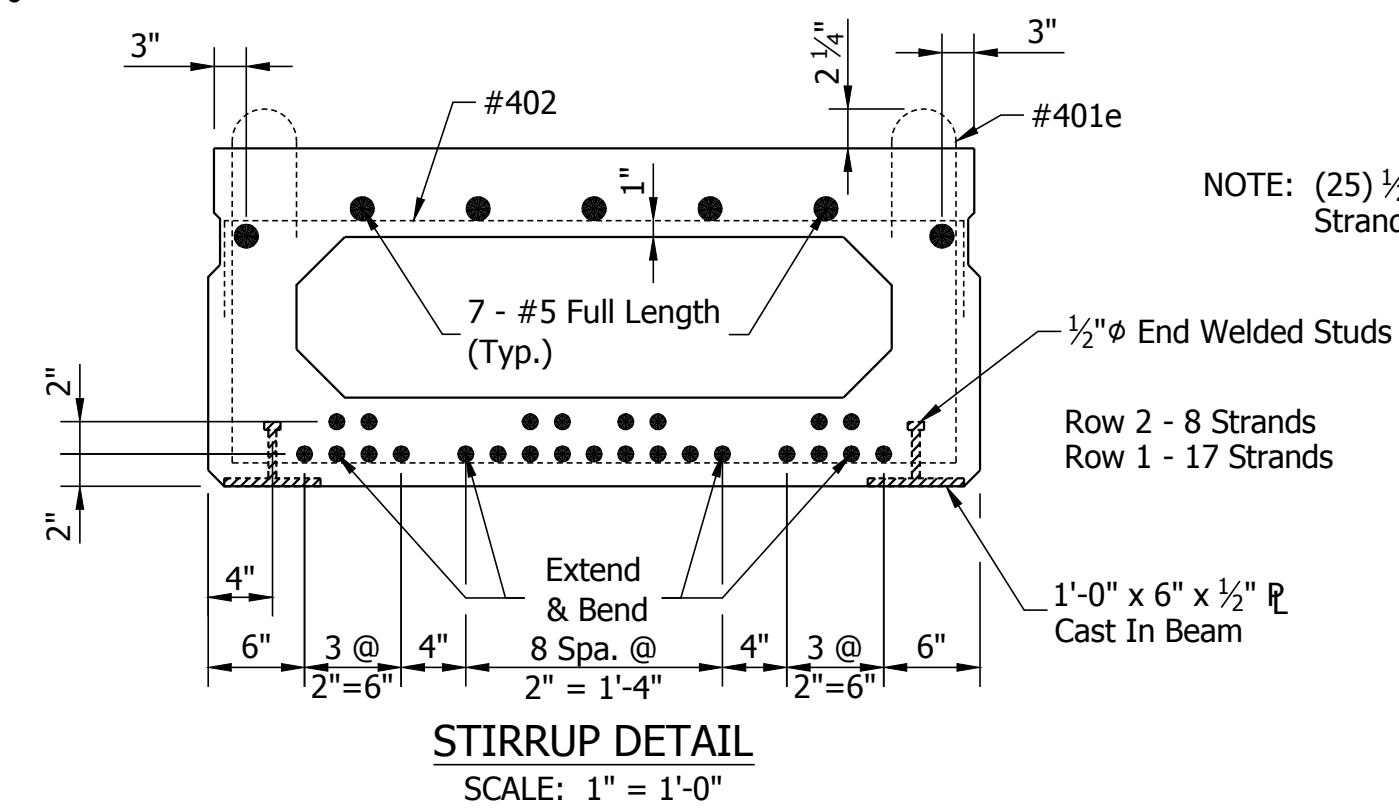
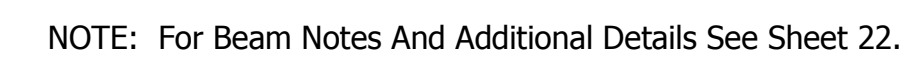
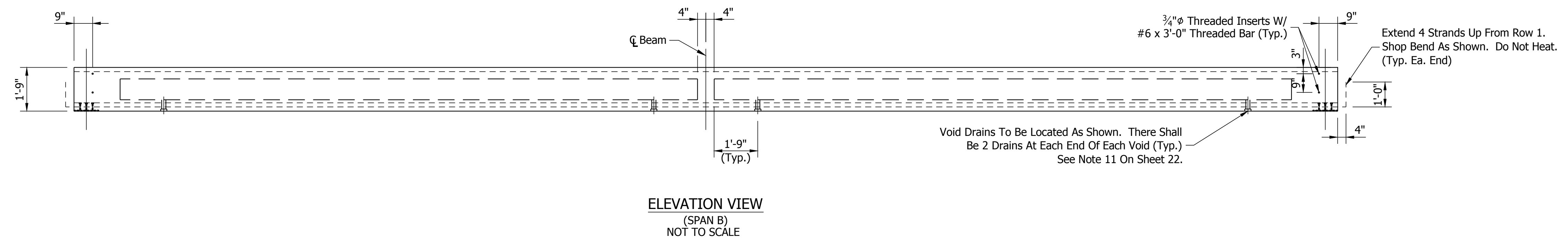


RECOMMENDED FOR APPROVAL	Mark A. Riehl	DESIGN ENGINEER	03/02/2016	DATE
DESIGNED:	MAR	DRAWN:	VCH	
CHECKED:	KJC	CHECKED:	MAR	

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

BEAM DETAILS  
SPAN A OR C


HORIZONTAL SCALE	BRIDGE FILE	
AS SHOWN	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
AS SHOWN	----	
SURVEY BOOK	SHEETS	
	22	of 34
CONTRACT	PROJECT	
----	PB-14-0012	



NOTE: (25) 1/2" 7 Wire Special Lo-Lax Strands Spaced At 2".

Row 2 - 8 Strands  
Row 1 - 17 Strands

— 1'-0" x 6" x 1/2" R  
Cast In Beam

RECOMMENDED  
FOR APPROVAL

Mark A. Rieck

03/02/2016  
DATE

DESIGNED: MAR

DRAWN: VCH

CHECKED: \_\_\_\_\_ KJC

CHECKED: \_\_\_\_\_ MAR \_\_\_\_\_

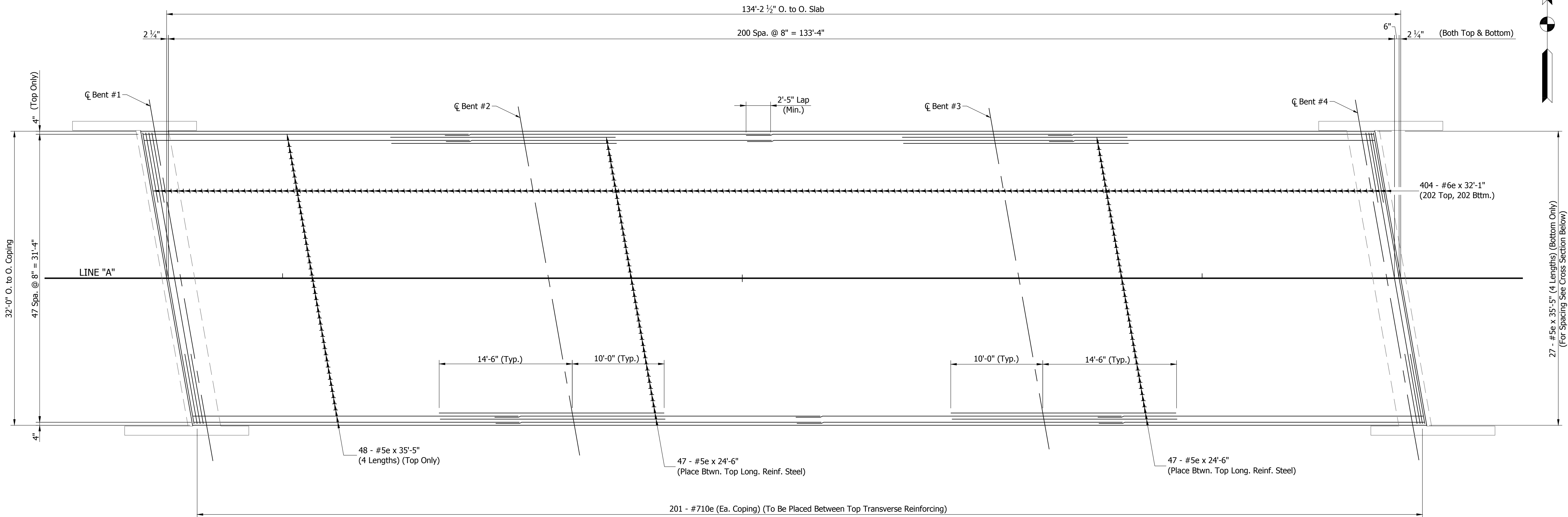
HAMILTON COUNTY  
HIGHWAY DEPARTMENT

BEAM DETAILS  
SPAN B

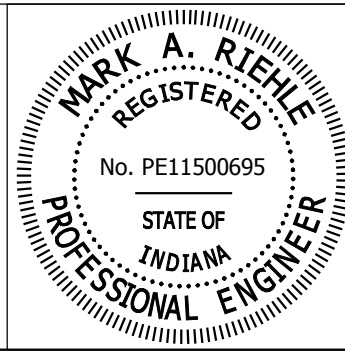
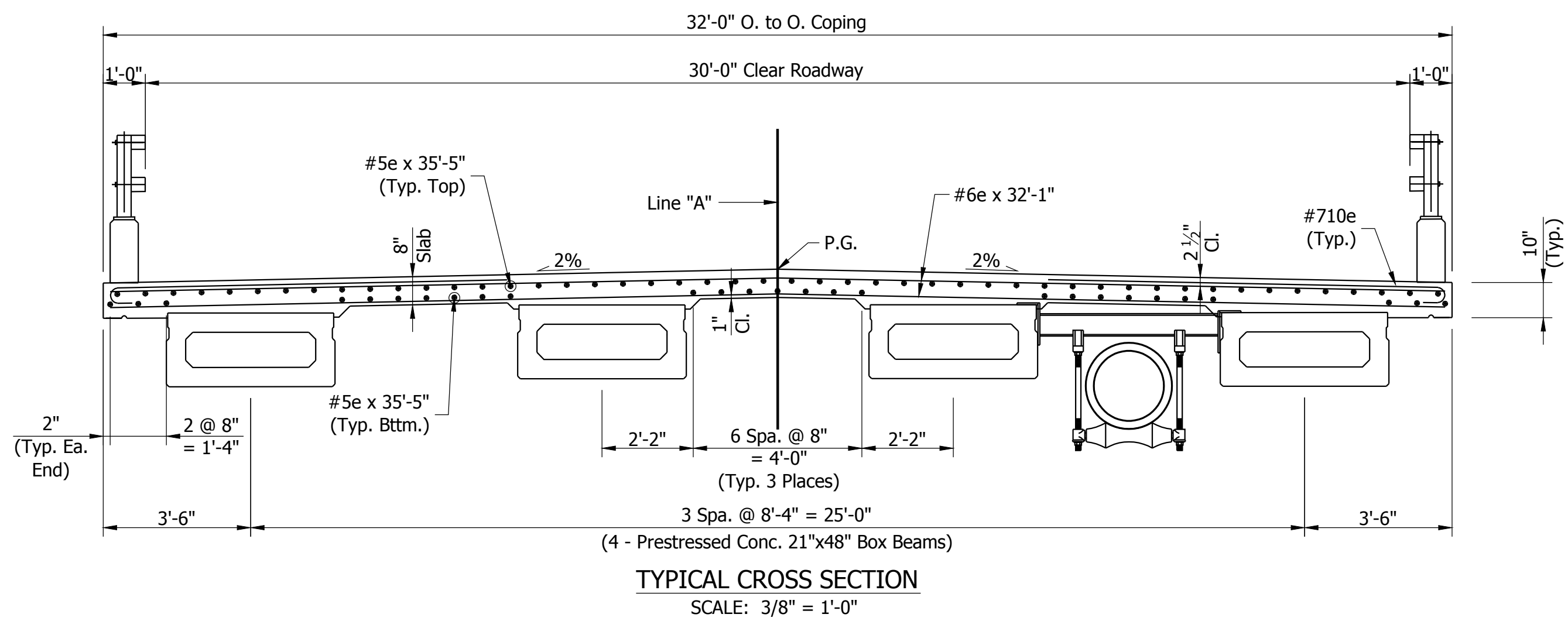
HORIZONTAL SCALE		BRIDGE FILE	
AS SHOWN		HAMILTON CO. BR. #35	
VERTICAL SCALE		DESIGNATION	
AS SHOWN		----	
SURVEY BOOK		SHEETS	
		23	of 34
CONTRACT		PROJECT	
----		PB-14-0012	

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PLAN VIEW

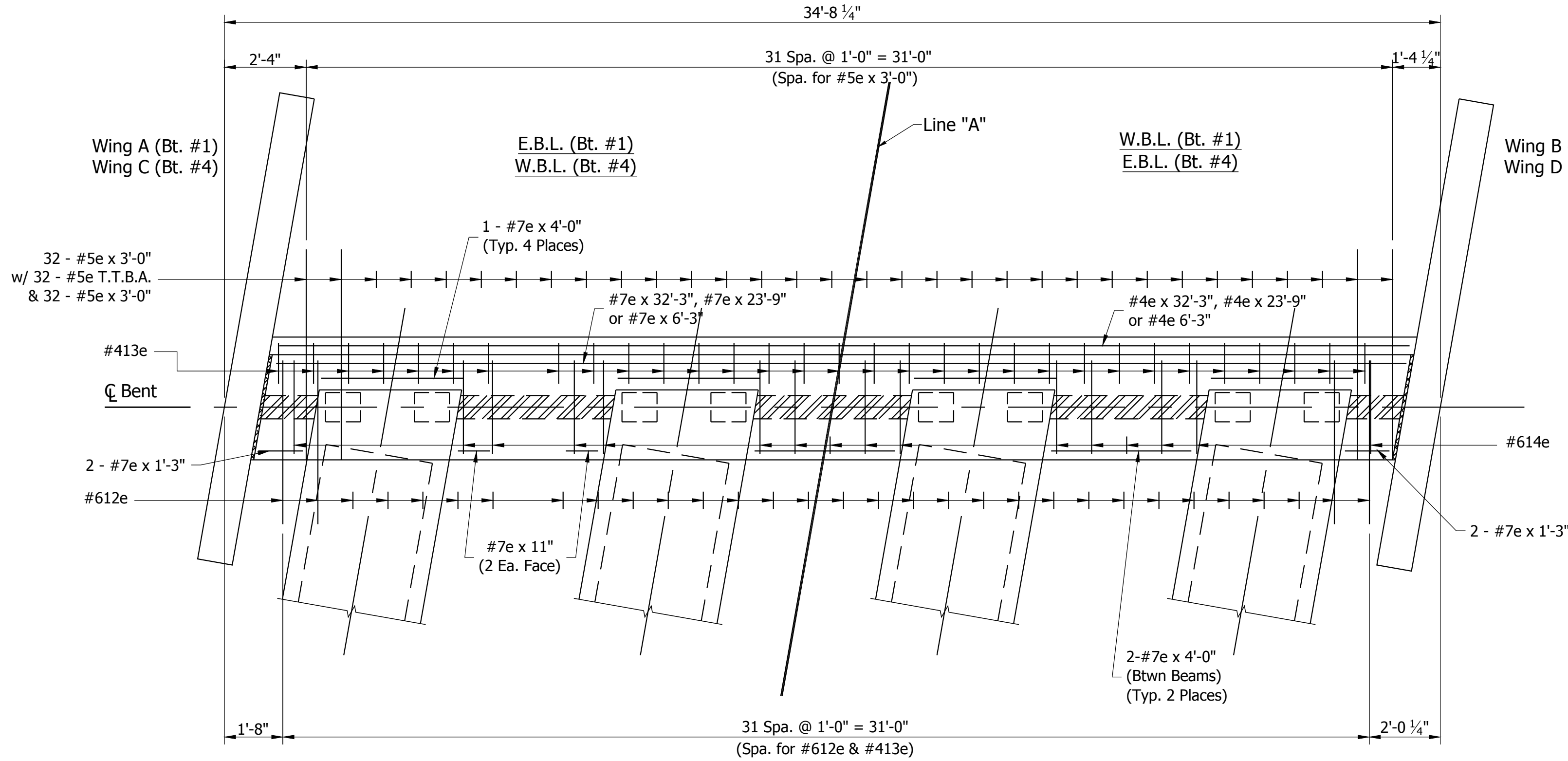


RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED: MAR	DRAWN: TAM	
CHECKED: ACS	CHECKED: MAR	

HAMILTON COUNTY HIGHWAY DEPARTMENT
SUPERSTRUCTURE DETAILS

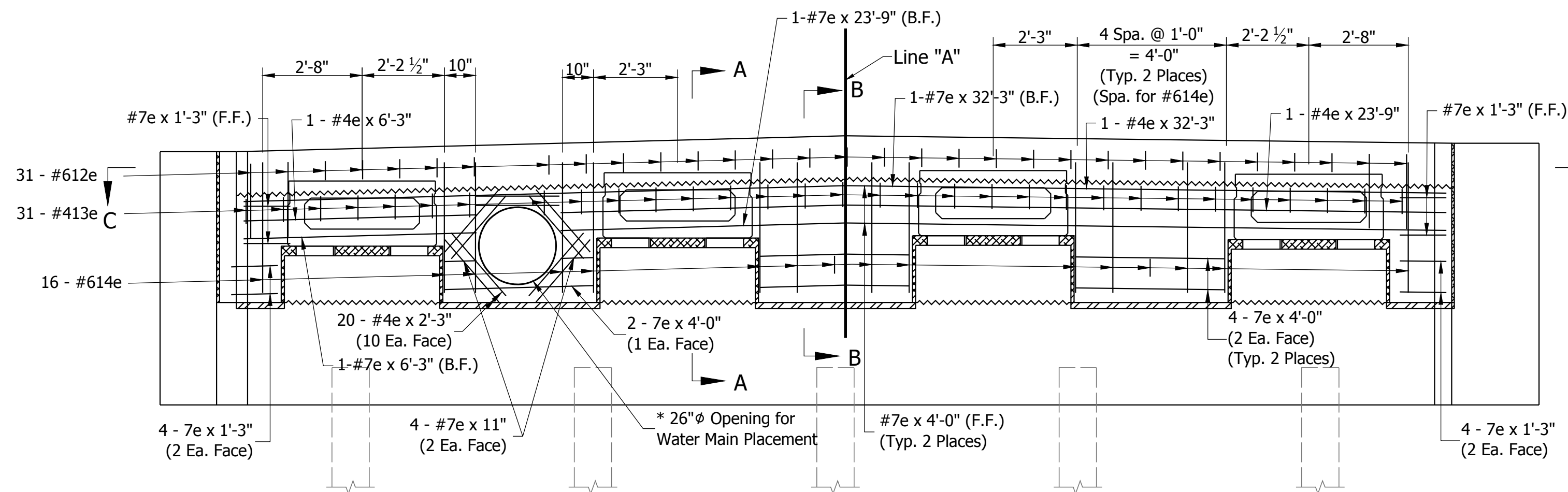
HORIZONTAL SCALE 3/16"=1'-0"	BRIDGE FILE HAMILTON CO. BR. #35
VERTICAL SCALE 3/16"=1'-0"	DESIGNATION ----
SURVEY BOOK	SHEETS 24 of 34
CONTRACT ----	PROJECT PB-14-0012

Date: Mar 31, 2016, 8:39am User Name: vaughn  
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SECTION C-C

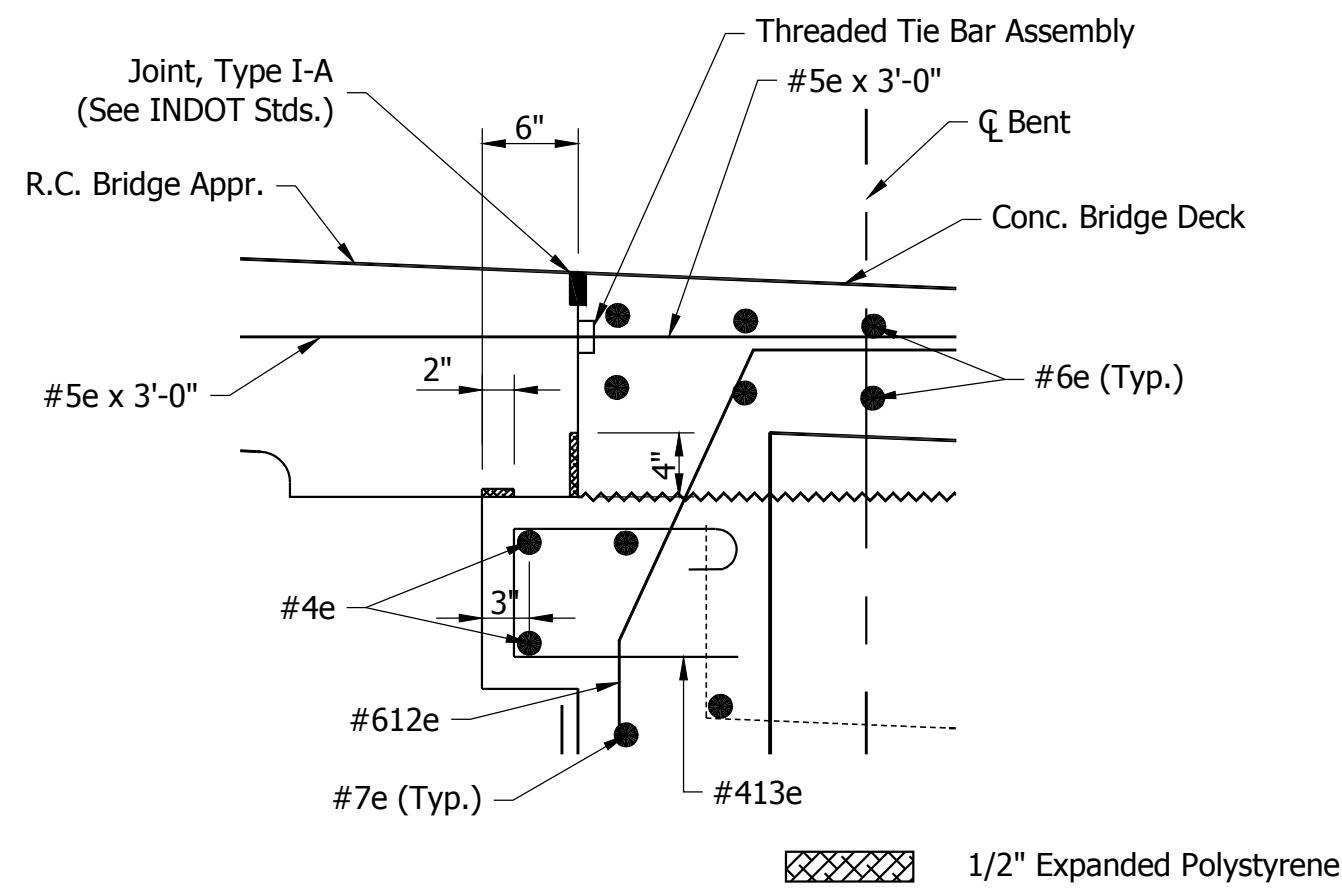
BENT #1 SHOWN, BENT #4 SIMILAR



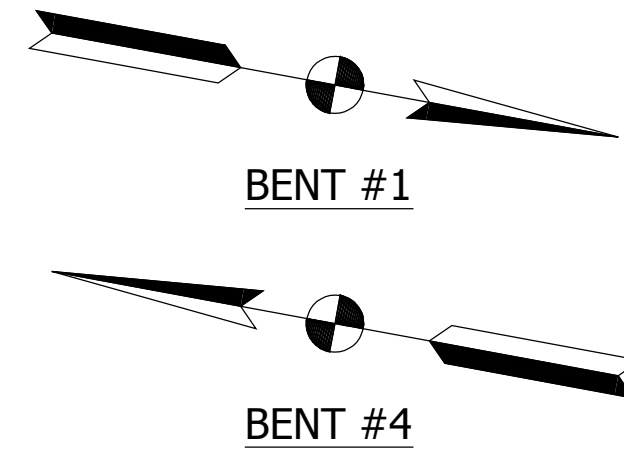
ELEVATION VIEW

BENT #1 SHOWN, BENT #4 SIMILAR

\* Reinforcing Around 26"  $\phi$  Opening May Be Adjusted  
Or Cut As Necessary & Approved by the Engineer.

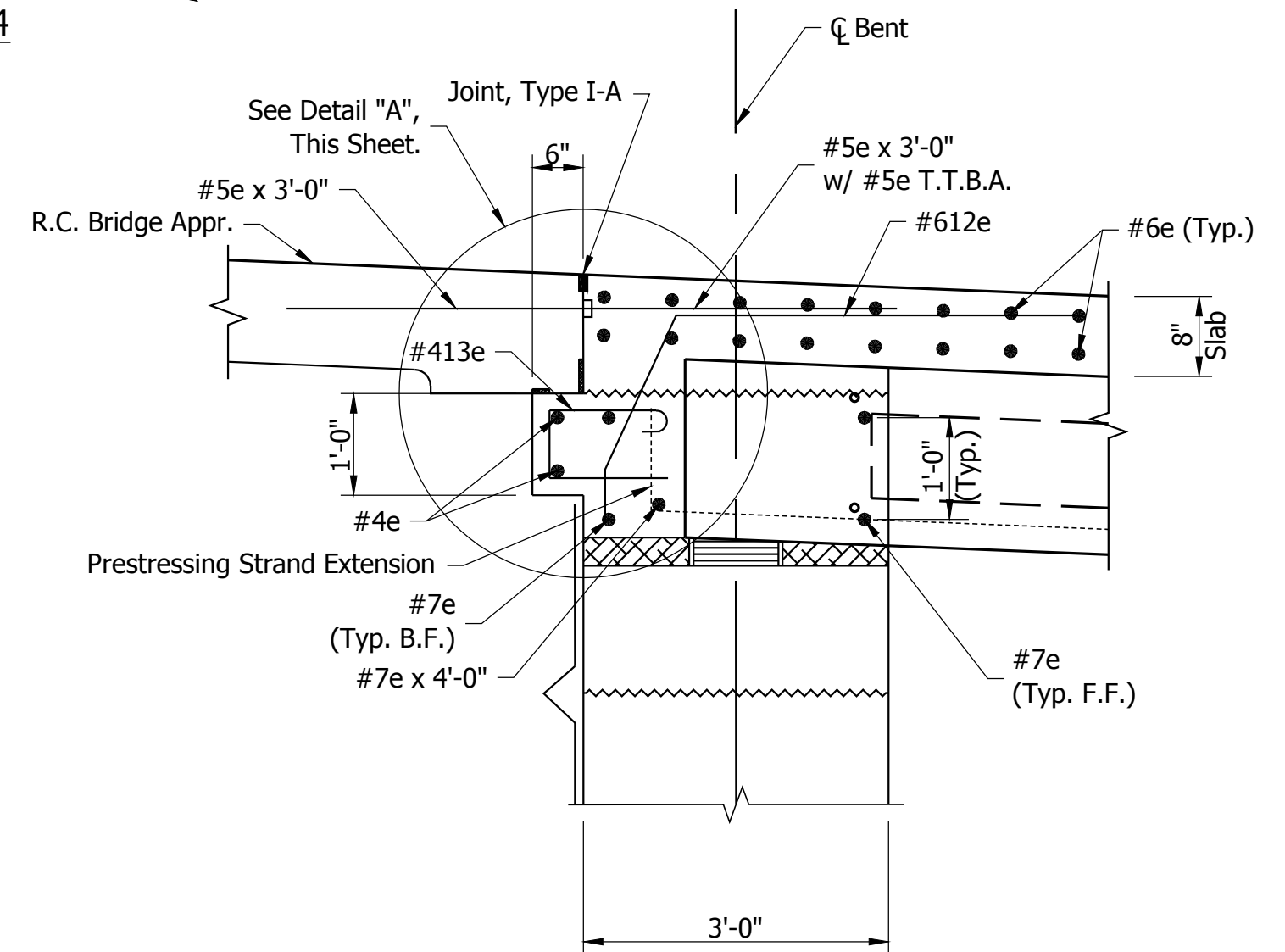


DETAIL "A"  
SCALE: 1" = 1'-0"



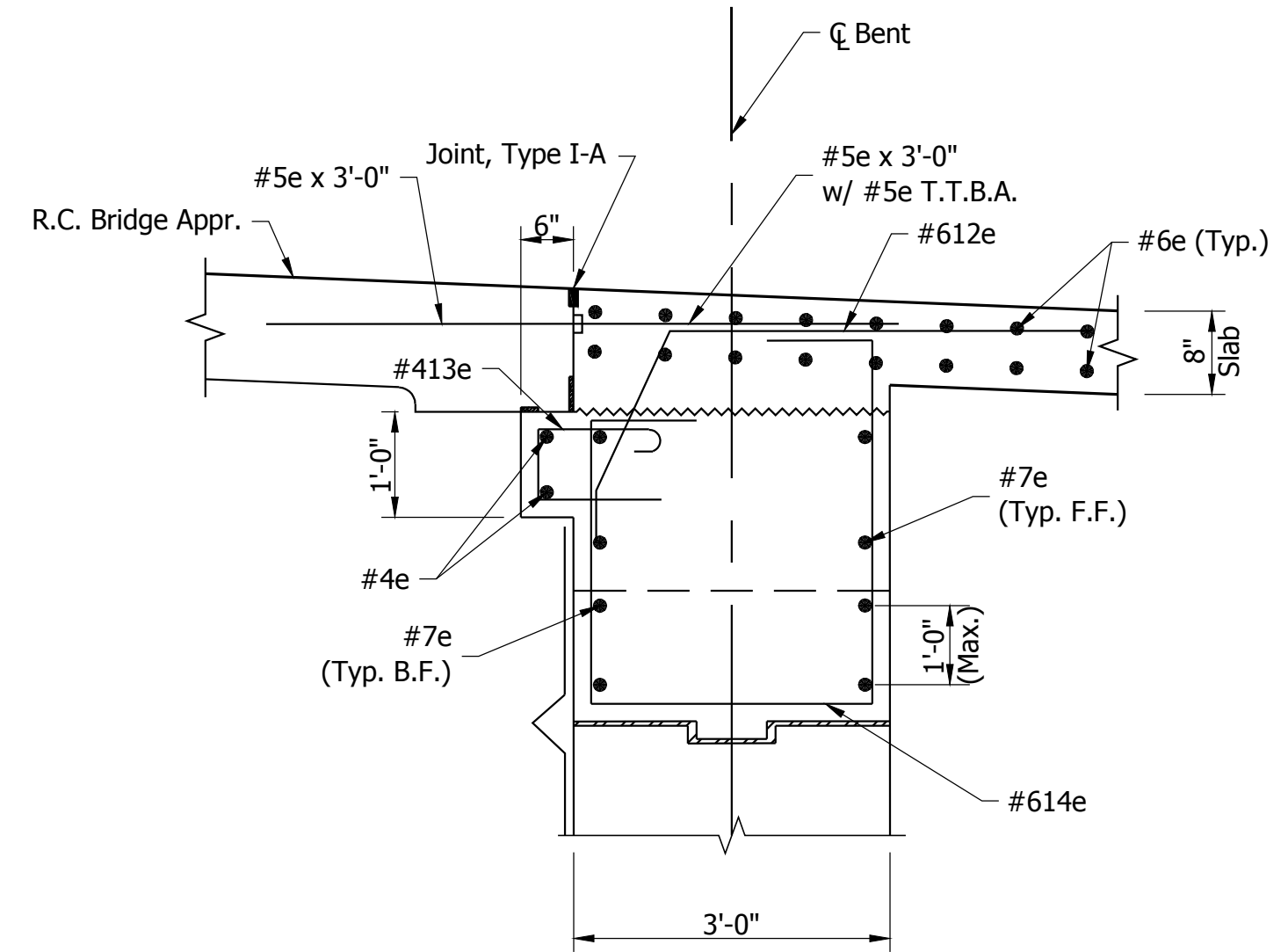
BENT #1

BENT #4



SECTION A-A

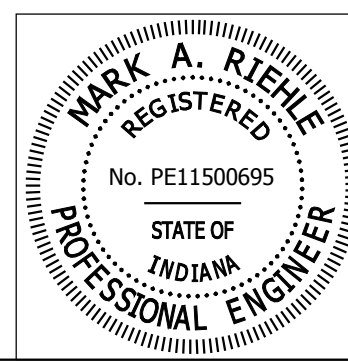
SCALE: 5/8" = 1'-0"



SECTION B-B

SCALE: 5/8" = 1'-0"

NOTES: F.F. - Denotes Front Face  
B.F. - Denotes Back Face  
T.T.B.A. - Denotes Threaded Tie Bar Assembly



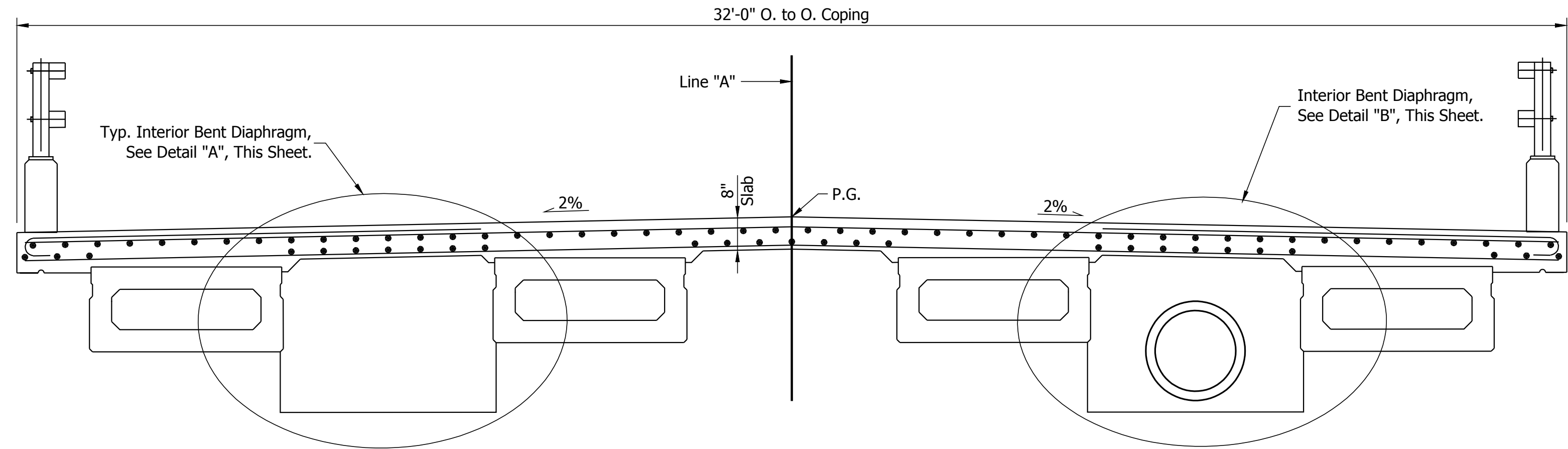
RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED: MAR	DRAWN: TAM	
CHECKED: ACS	CHECKED: MAR	

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

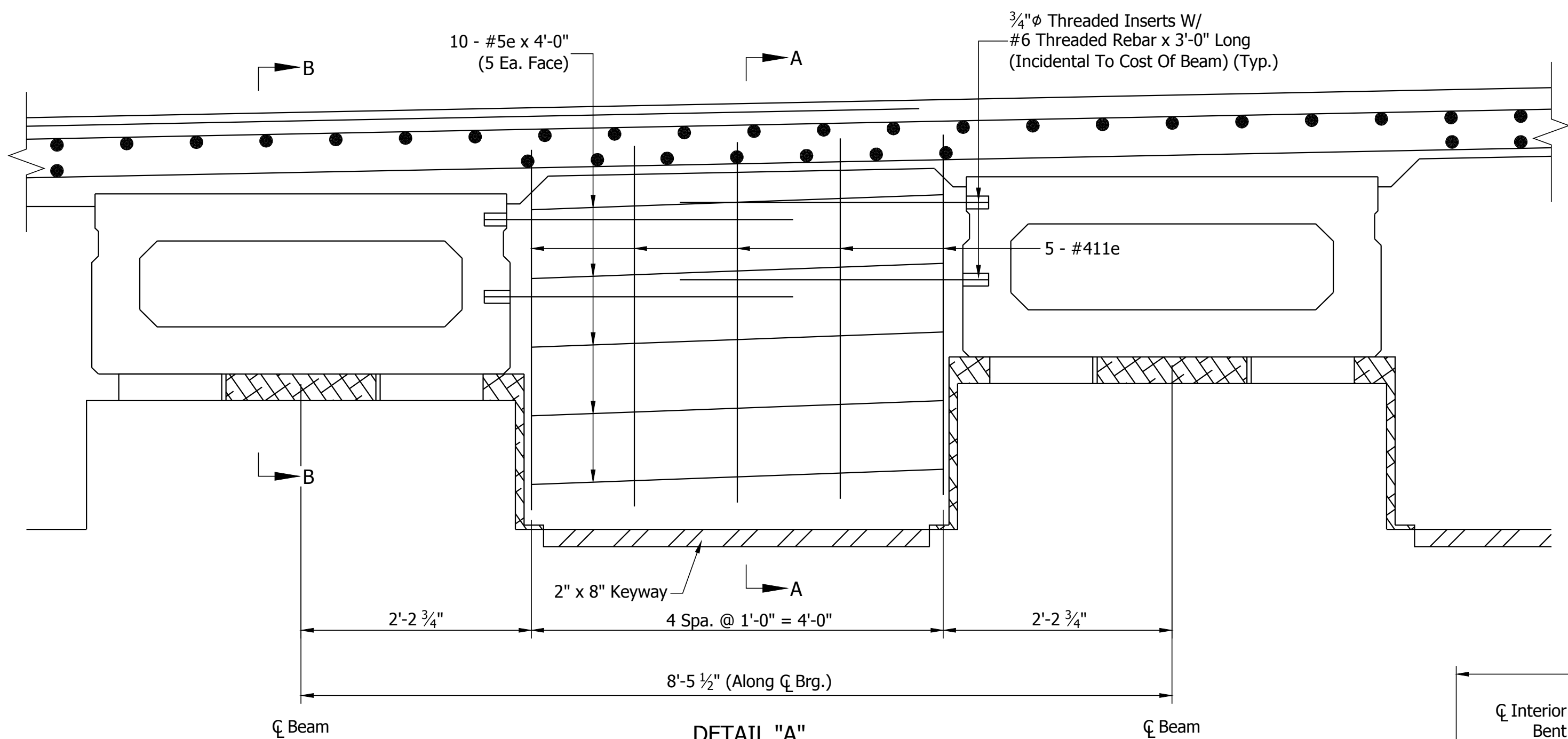
SUPERSTRUCTURE DETAILS

HORIZONTAL SCALE	BRIDGE FILE	
3/8"=1'-0"	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
3/8"=1'-0"	----	
SURVEY BOOK	SHEETS	
	25	of 34
CONTRACT	PROJECT	
----	PB-14-0012	

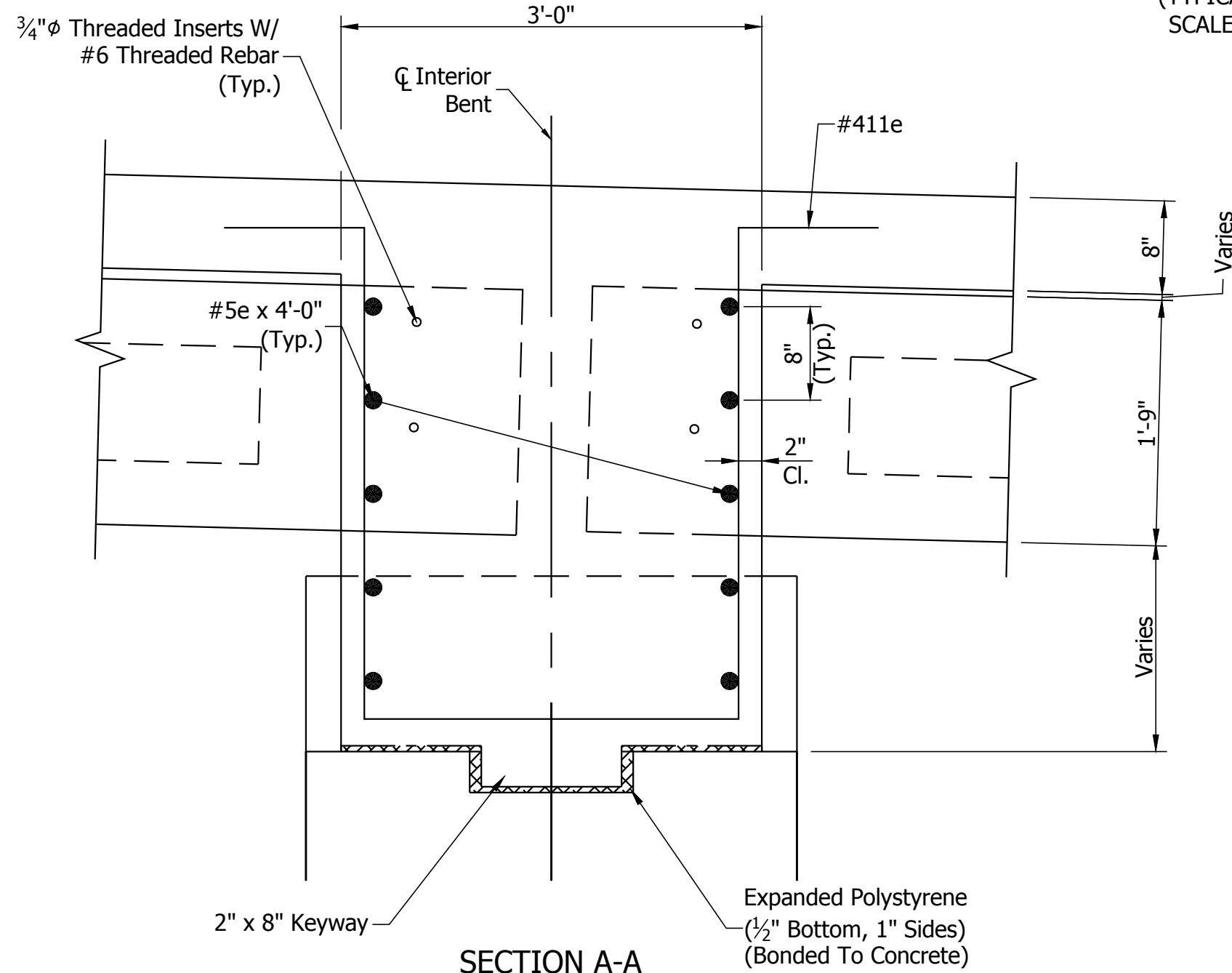
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 File: S:\215-00391\bridge\CAD\Plans\Engineering



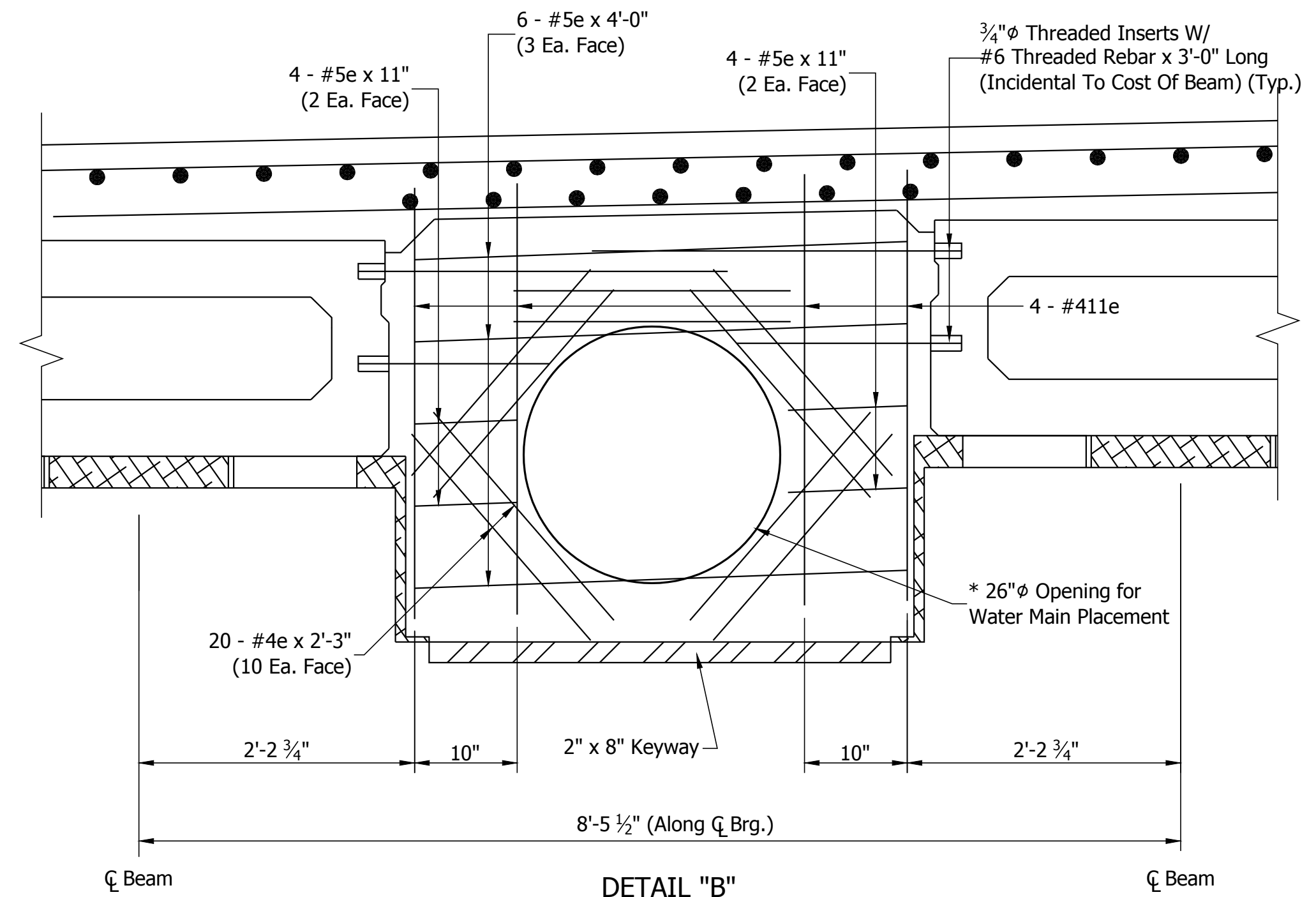
TYPICAL CROSS SECTION



DETAIL "A"  
(TYPICAL 4 PLACES)  
SCALE: 1" = 1'-0"

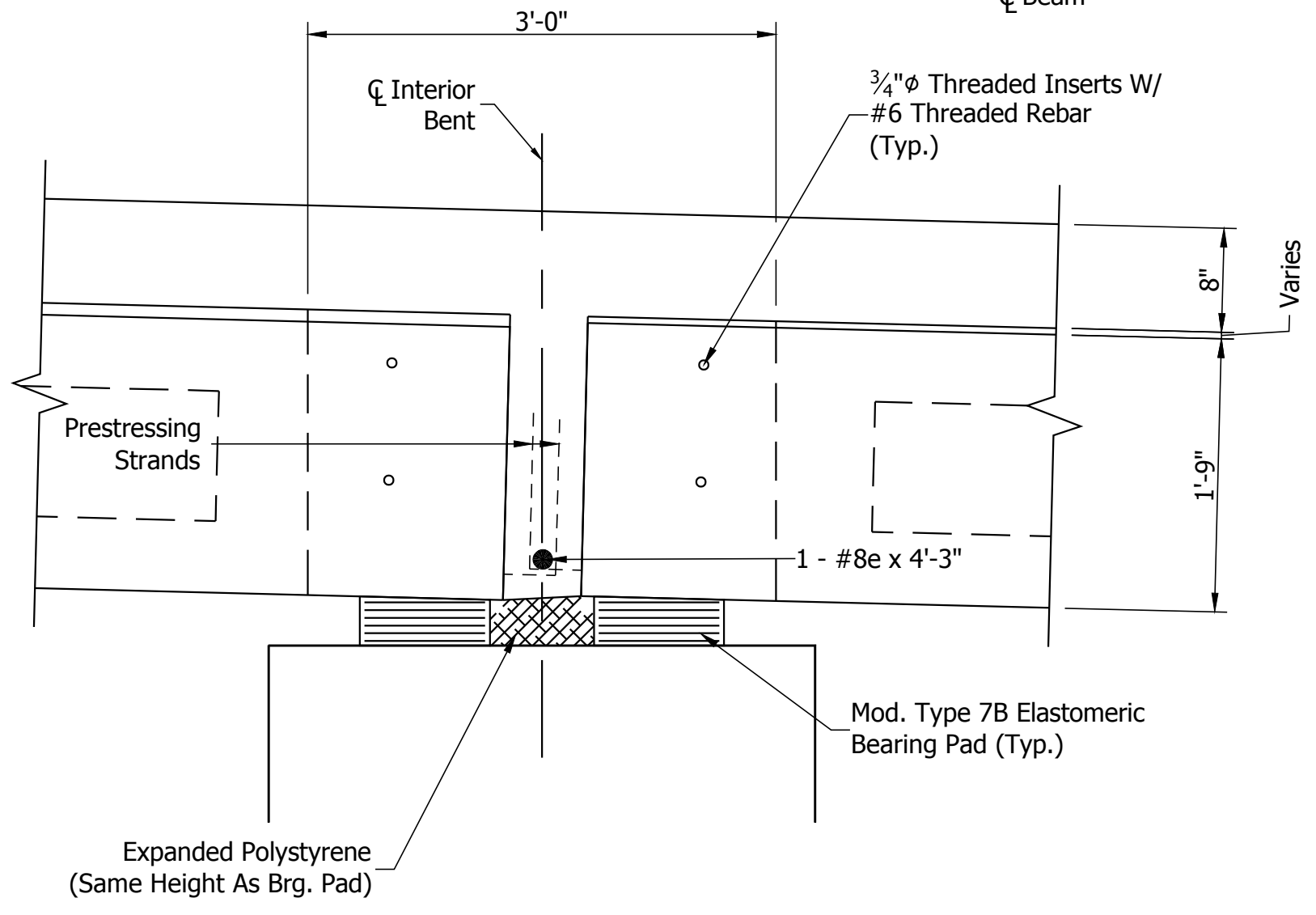


SECTION A-A  
(BETWEEN BEAMS)  
SCALE: 1" = 1'-0"

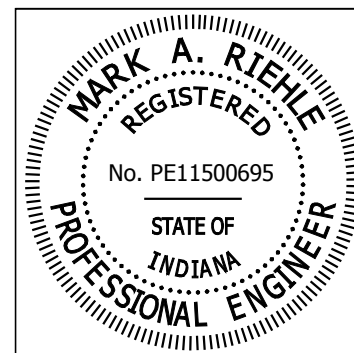
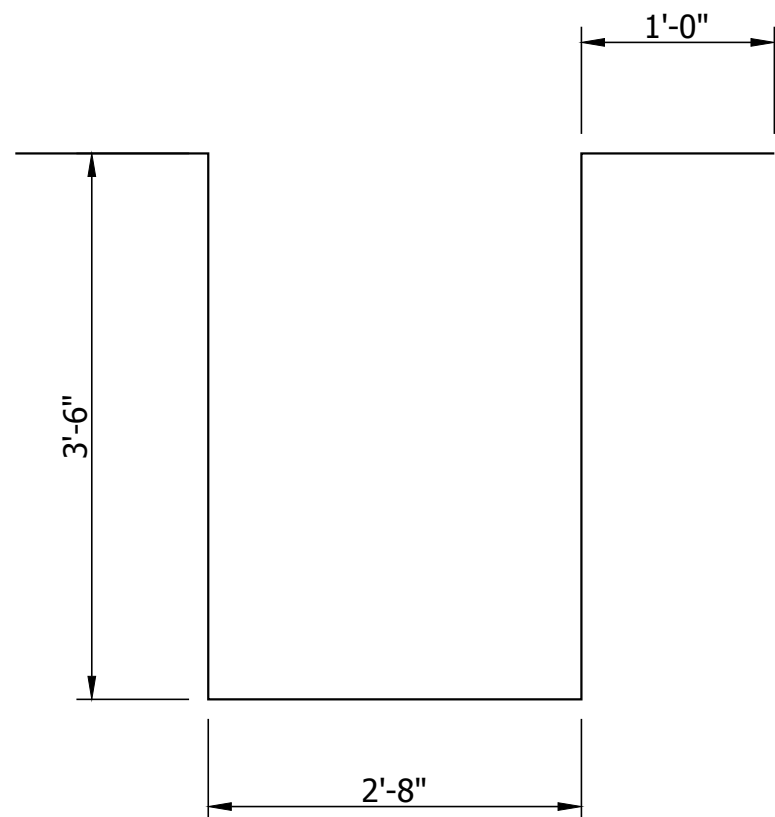


DETAIL "B"  
(TYPICAL 2 PLACES)  
SCALE: 1" = 1'-0"

\* Reinforcing Around 26" Opening May Be Adjusted Or Cut As Necessary & Approved by the Engineer.



SECTION B-B  
(AT BEAMS, TYPICAL 8 PLACES)  
SCALE: 1" = 1'-0"

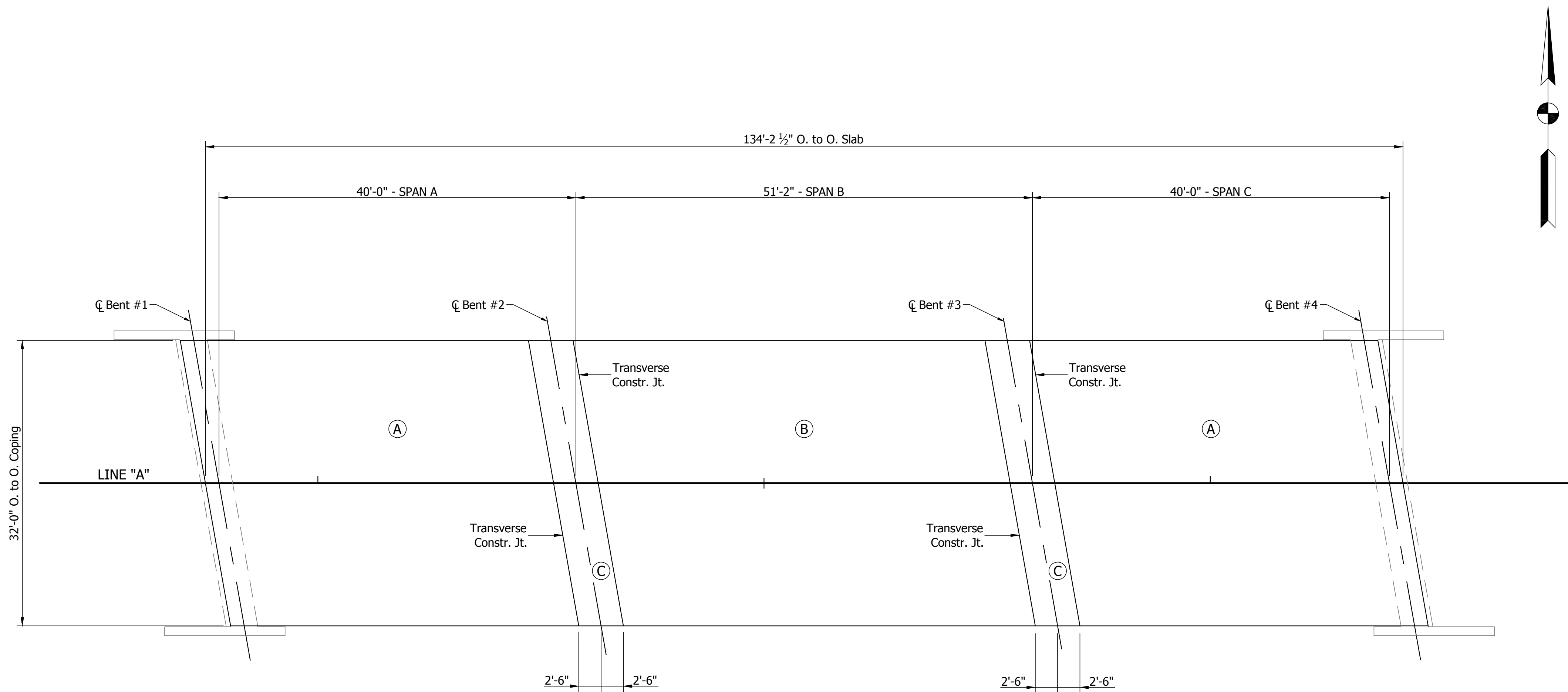


RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	DESIGN ENGINEER	03/02/2016	DATE
DESIGNED:	MAR	DRAWN:	TAM	
CHECKED:	KJC	CHECKED:	MAR	

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

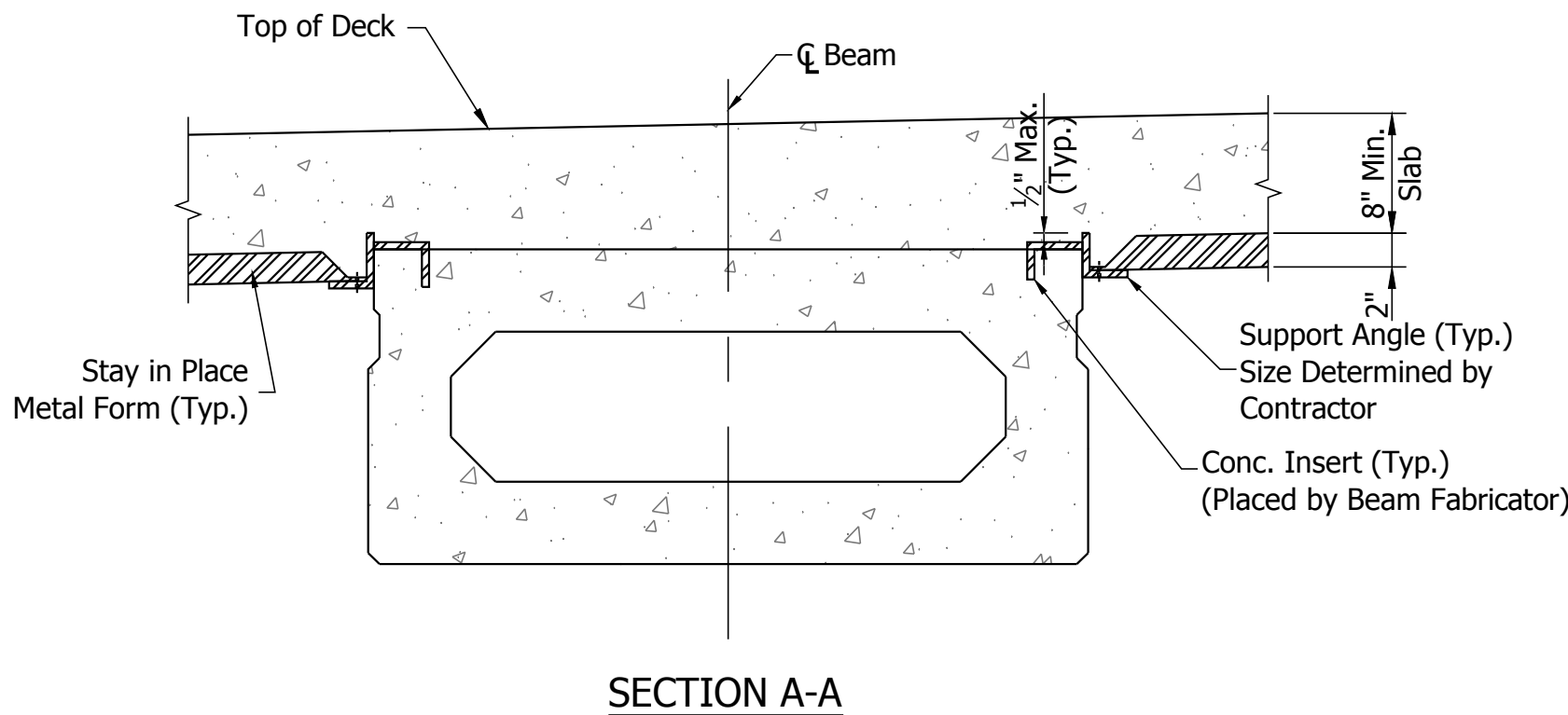
SUPERSTRUCTURE DETAILS

HORIZONTAL SCALE	BRIDGE FILE
1/2"=1'-0"	HAMILTON CO. BR. #35
VERTICAL SCALE	DESIGNATION
1/2"=1'-0"	----
SURVEY BOOK	SHEETS
CONTRACT	26 of 34
----	PROJECT
	PB-14-0012

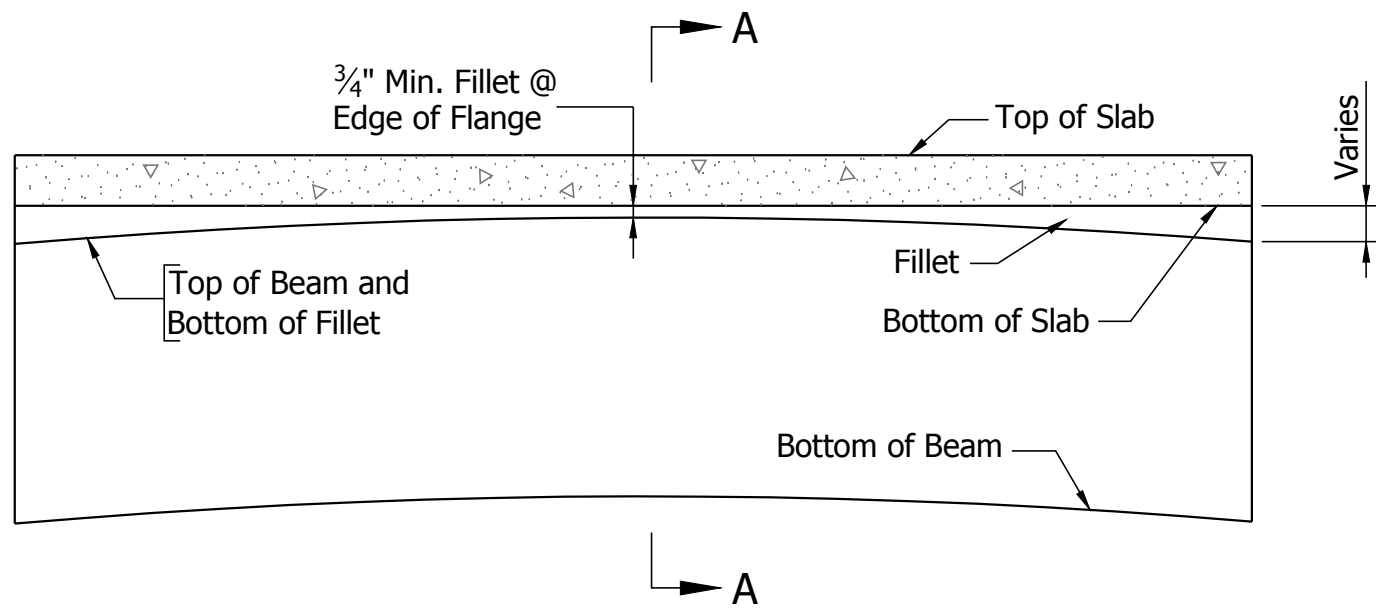


POUR DIAGRAM

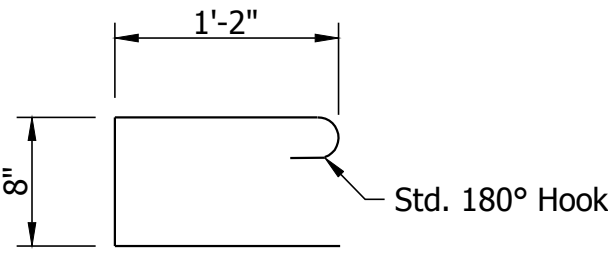
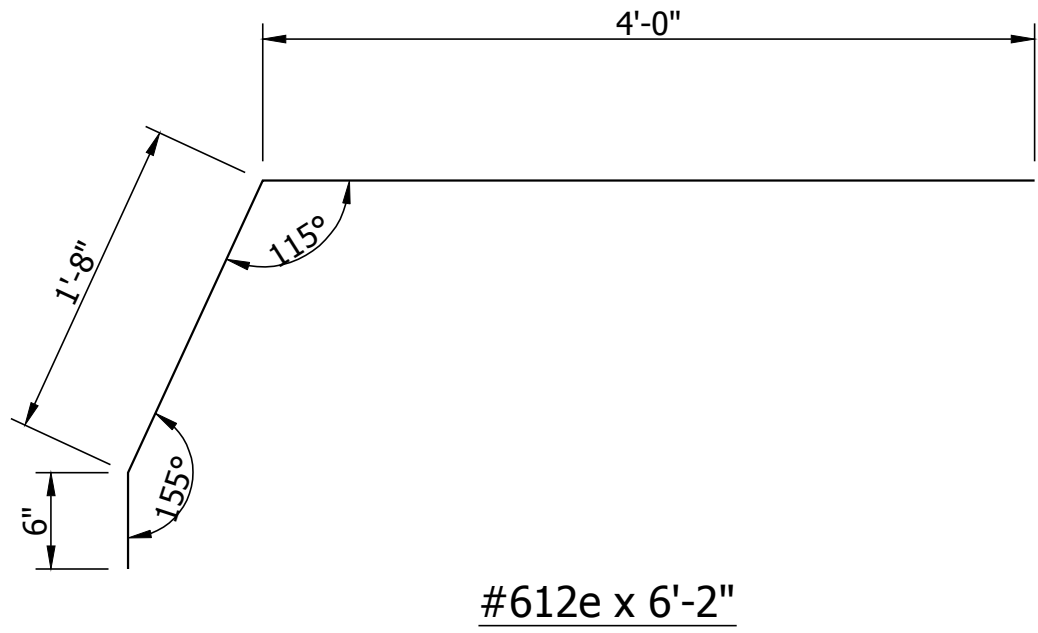
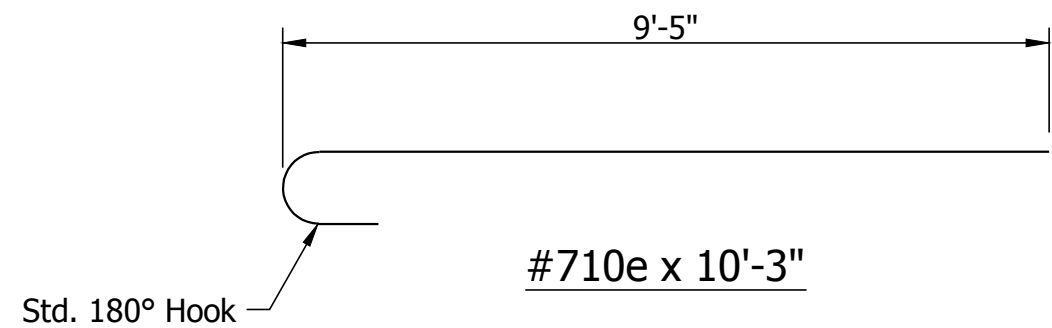
NOTE: Pour Letters Indicate Sequence Of Pours, Pours Over Interior Supports Shall Be Made Last To Reduce The Effect Of The Slab Dead Load In The Negative Moment Area. Pour C Will Include The Diaphragm At The Support And Shall Be Held To A 5'-0" Length.



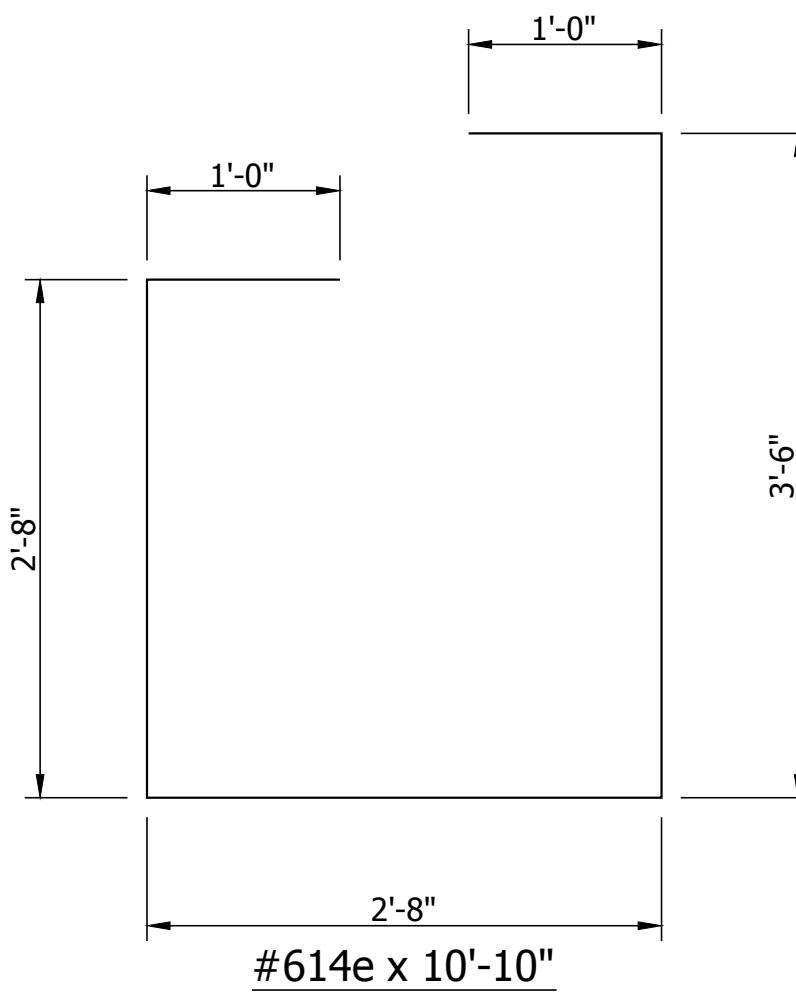
FILLET DETAILS  
NOT TO SCALE



Beam Seat Elevations Were Calculated Using Residual Beam Camber (Design Camber and Dead Load deflection of Slab) With The Top of Beam 3/4" Below The Bottom of Slab Elevation At The Centerline of Span.



SUPERSTRUCTURE			
REINFORCING STEEL			
SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (lbs)
EPOXY COATED REINFORCING STEEL			
#8e	8	4'-3"	
TOTAL #8e BARS:			91
#710e	402	10'-3"	
#7e	2	32'-3"	
#7e	2	23'-9"	
#7e	2	6'-3"	
#7e	36	4'-0"	
#7e	24	1'-3"	
#7e	8	11"	
TOTAL #7e BARS:			9047
#614e	32	8'-3"	
#612e	62	6'-2"	
#6e	404	32'-1"	
TOTAL #6e BARS:			20439
#5e	300	35'-5"	
#5e	94	24'-6"	
#5e	52	4'-0"	
#5e	128	3'-0"	
#5e	16	11"	
TOTAL #5e BARS:			14117
#413e	62	3'-6"	
#411e	28	8'-8"	
#4e	2	32'-3"	
#4e	2	23'-9"	
#4e	2	6'-3"	
#4e	80	2'-3"	
TOTAL #4e BARS:			510
TOTAL EPOXY COATED REINFORCING			44204
CONCRETE			
Concrete, C, Superstructure			
Pour A			89.0 yd <sup>3</sup>
Pour B			40.8 yd <sup>3</sup>
Pour C			20.0 yd <sup>3</sup>
TOTAL			149.8 yd <sup>3</sup>
MISCELLANEOUS			
Surface Seal			4700 ft <sup>2</sup>
Str. Members, Conc. Box Beam, CB 21x48			525 Lft.
Threaded Tie Bar Assembly, E.C.			64 Ea.



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File: S:\215-00391\bridge\CAD\Plans\Superstruc

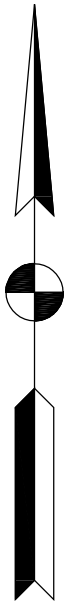


RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED:	MAR	DRAWN:
		VCH
CHECKED:	KJC	CHECKED:
		MAR

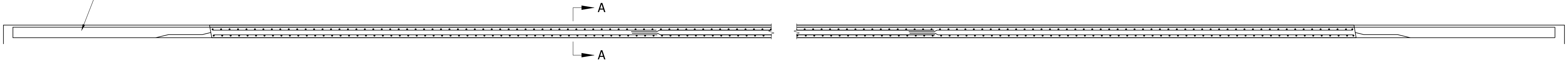
HAMILTON COUNTY  
HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS

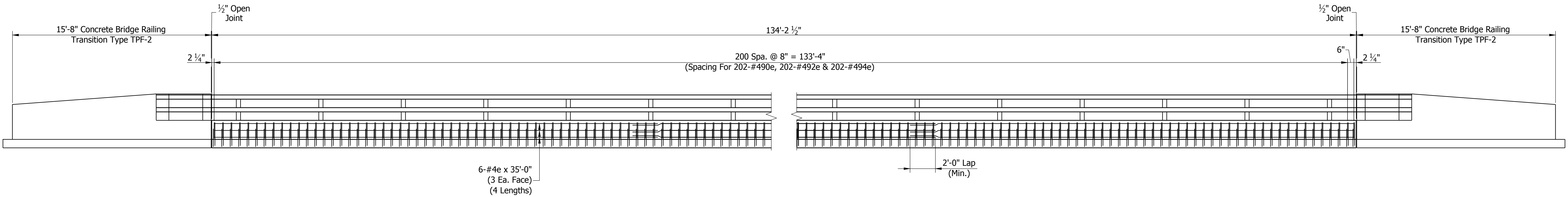
HORIZONTAL SCALE	BRIDGE FILE	
1/8"=1'-0"	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
1/8"=1'-0"	----	
SURVEY BOOK	SHEETS	
	27	of 34
CONTRACT	PROJECT	
----	PB-14-0012	



For Bridge Railing Transition TPF-2 See  
INDOT Std's. 706-TTPP-03 & 706-TTPP-04



PLAN VIEW  
LEFT RAILING SHOWN, RIGHT RAILING SIMILAR



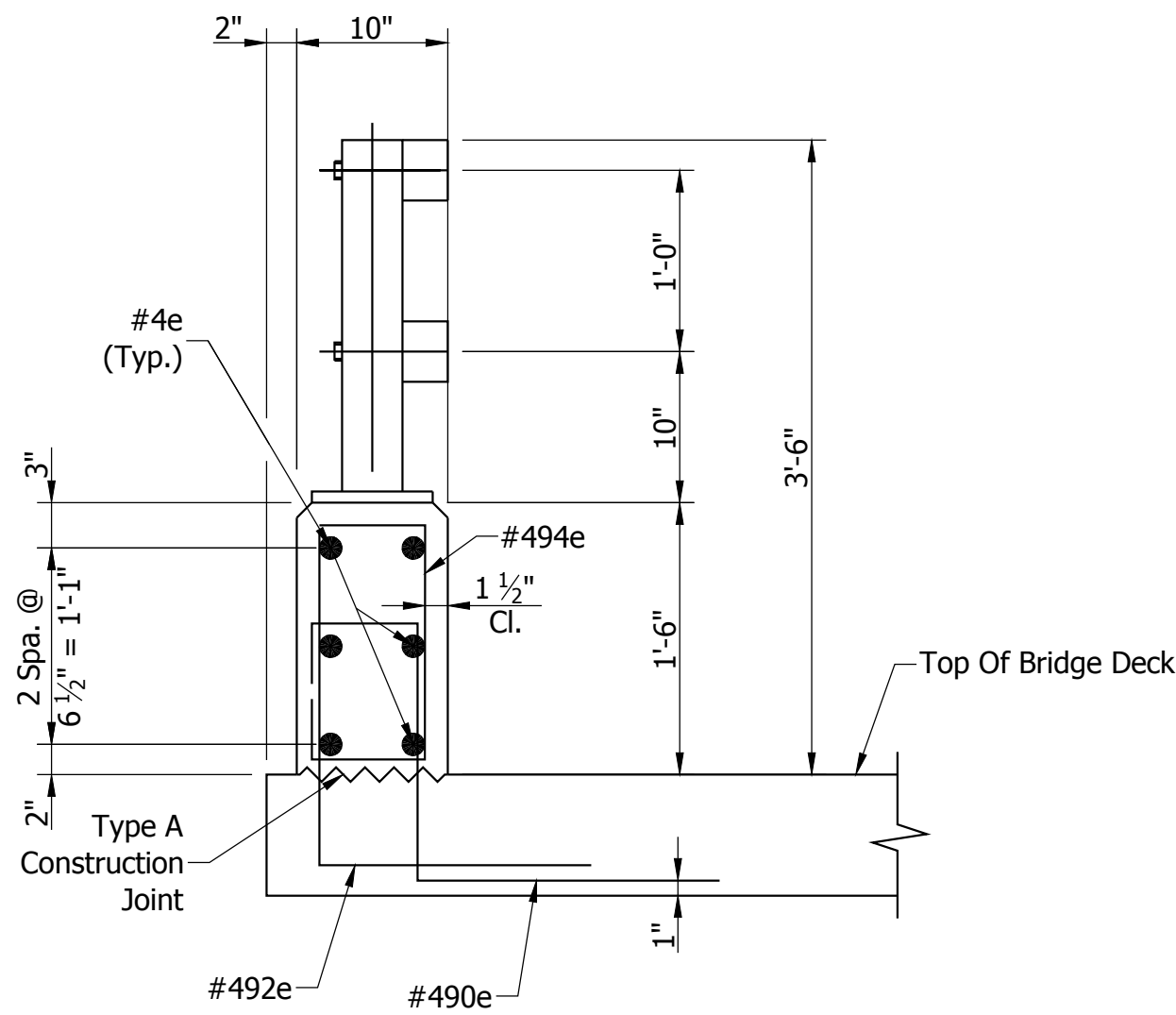
ELEVATION VIEW  
LEFT RAILING SHOWN, RIGHT RAILING SIMILAR

- NOTES:
- #490e & 492e Are To Be Cast With Deck.
  - For Additional Details See INDOT Std's. 706-BRPP-02, 706-BRPP-05 & 706-BRPP-06.

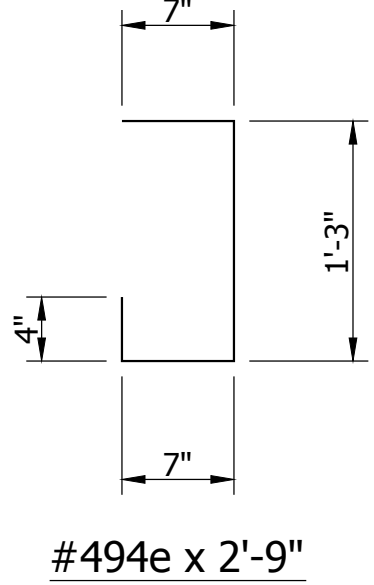
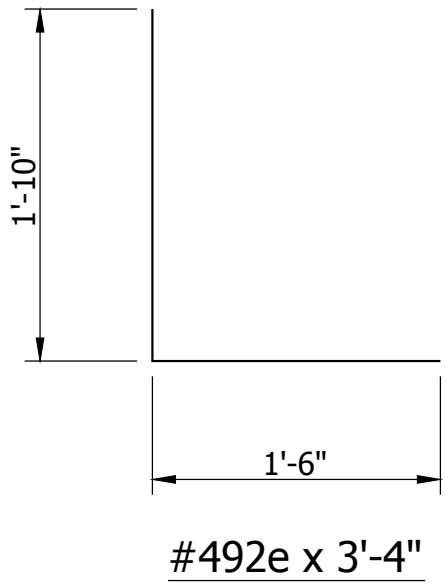
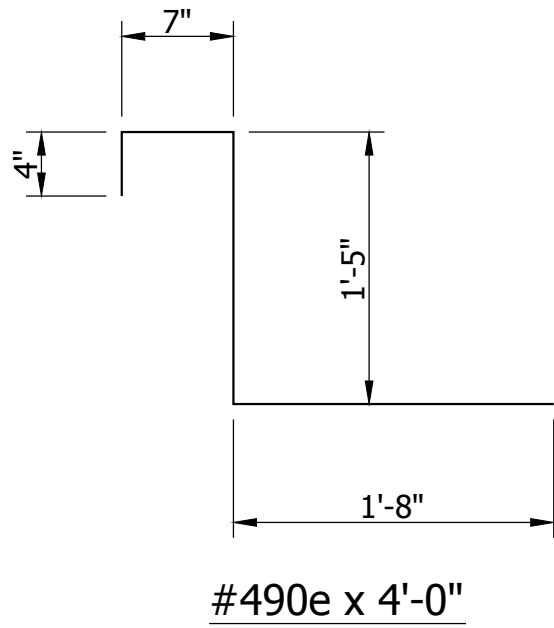
BILL OF MATERIALS

BARRIER RAIL (2 REQ'D)			
REINFORCING STEEL			
SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (lbs)
EPOXY COATED REINFORCING STEEL			
#494e	202	2'-9"	
#492e	202	3'-4"	
#490e	202	4'-0"	
#4e	24	35'-0"	
TOTAL #4e BARS:			1922
CONC. BRIDGE RAIL TRANS., TPF-2			1434
TOTAL EPOXY COATED REINF. STEEL			3356
CONCRETE			
RAILING, CONCRETE, PF-2			6.2 yd <sup>3</sup>
MISCELLANEOUS			
CONC. BRIDGE RAIL TRANS., TPF-2			2 Ea.*
RAILING, STEEL, PF-2			143 Lft.
SURFACE SEAL			465 ft <sup>2</sup>

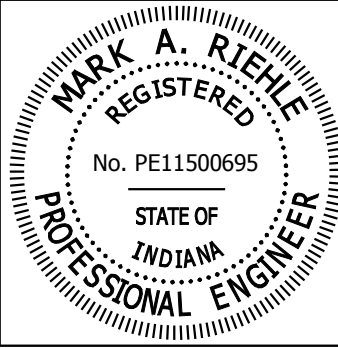
\* See Standard Drawing 706-TTPP-03 for  
Bill of Material for Concrete Bridge Railing  
Transition Type TPF-2.



SECTION A-A  
SCALE: 1"=1'-0"



Date: Mar 31, 2016, 8:39am User Name: vaughn  
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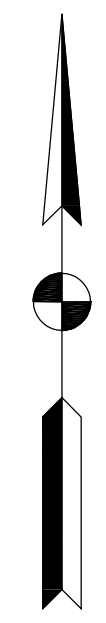
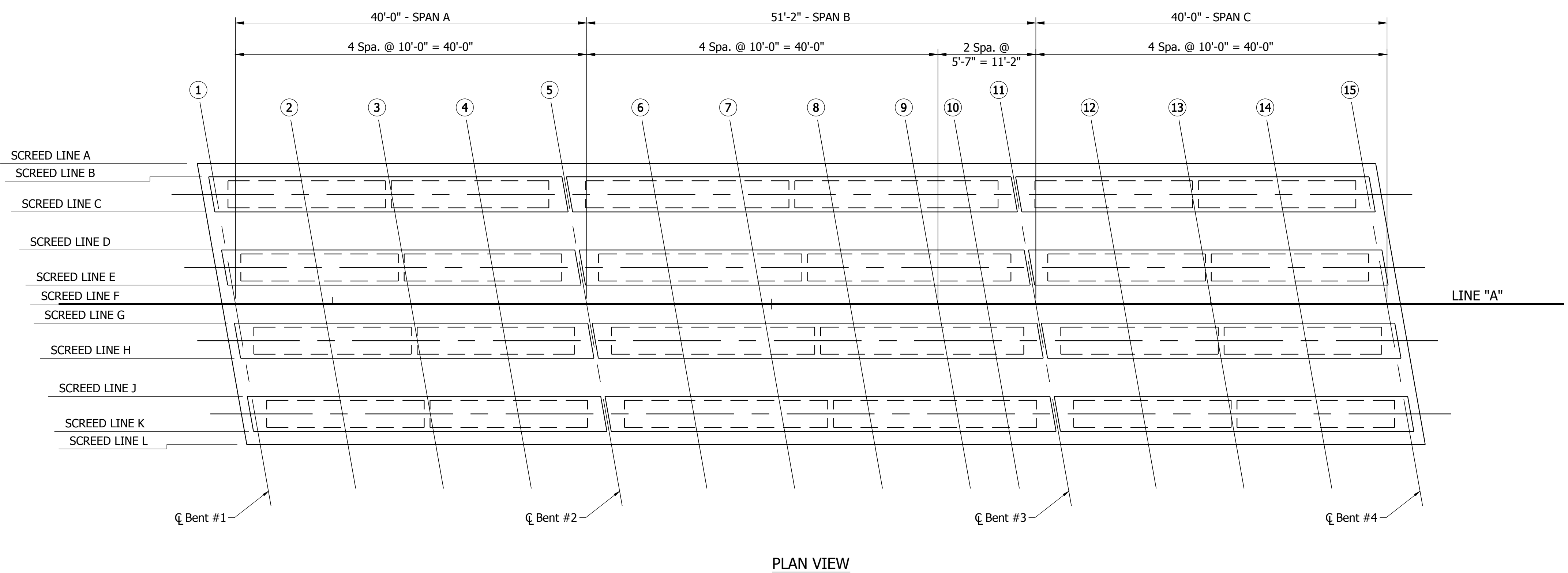
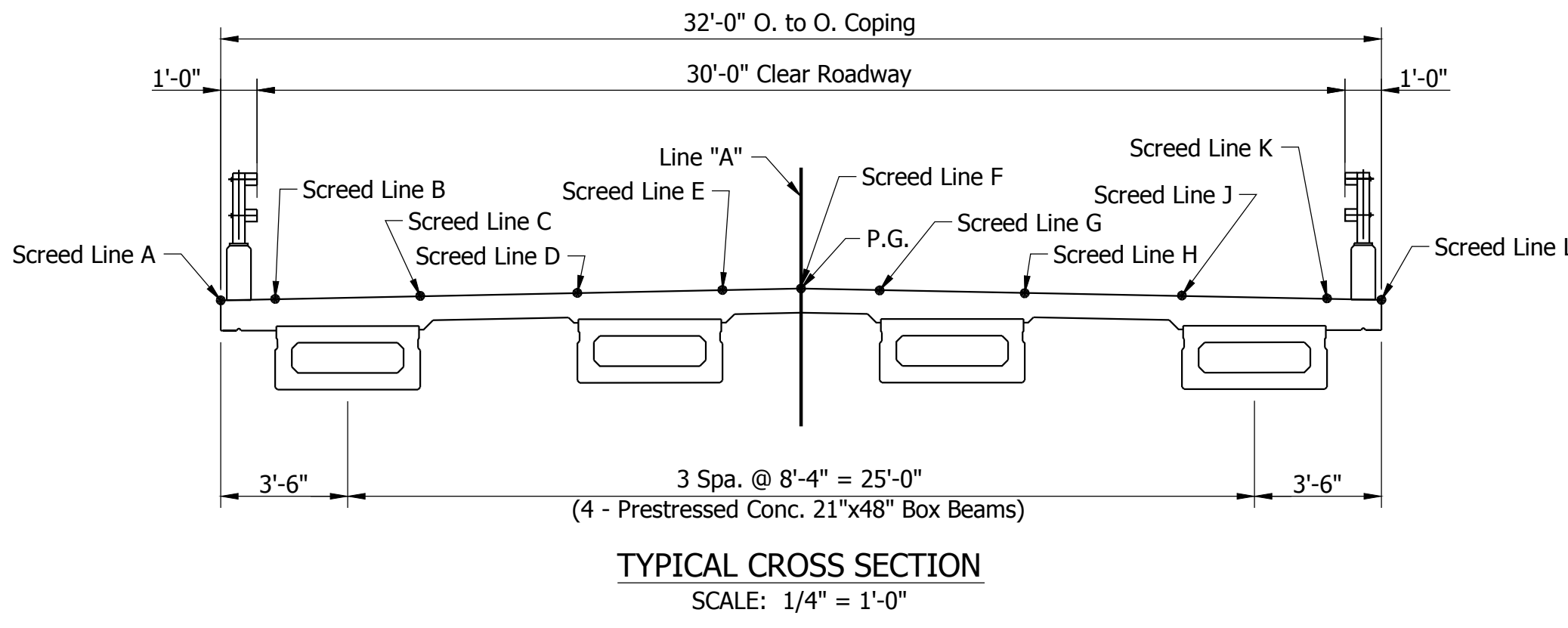
RECOMMENDED FOR APPROVAL	<i>Mark A. Riehl</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED:	MAR	DRAWN:
		VCH
CHECKED:	CRF	CHECKED:
		MAR

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

BARRIER RAIL DETAILS

HORIZONTAL SCALE	BRIDGE FILE	
1/4"=1'-0"	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
1/4"=1'-0"	----	
SURVEY BOOK	SHEETS	
	28	of 34
CONTRACT	PROJECT	
----	PB-14-0012	

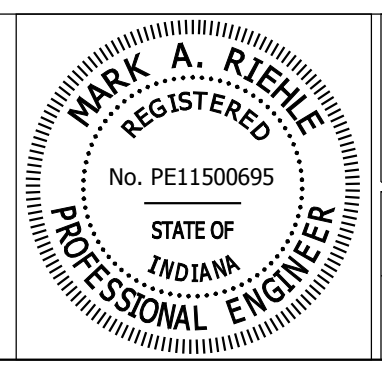
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	Lt. Coping	ELEVATION - TOP OF SCREED	821.38	820.96	820.54	820.13	819.72	819.36	819.01	818.64	818.27	818.06	817.86	817.55	817.24	816.92	816.61
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
B	Beam 1 Lt. Edge	ELEVATION - TOP OF SCREED	821.39	820.98	820.56	820.15	819.74	819.38	819.03	818.66	818.29	818.08	817.88	817.57	817.26	816.94	816.64
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
C	Beam 1 Rt. Edge	ELEVATION - TOP OF SCREED	821.44	821.03	820.61	820.20	819.79	819.44	819.08	818.72	818.35	818.14	817.94	817.62	817.32	817.00	816.70
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
D	Beam 2 Lt. Edge	ELEVATION - TOP OF SCREED	821.50	821.08	820.67	820.26	819.84	819.49	819.14	818.78	818.41	818.20	818.00	817.69	817.38	817.07	816.76
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
E	Beam 2 Rt. Edge	ELEVATION - TOP OF SCREED	821.55	821.13	820.72	820.31	819.90	819.55	819.19	818.83	818.46	818.26	818.05	817.74	817.44	817.13	816.82
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
F	Line "A" P.G.	ELEVATION - TOP OF SCREED	821.57	821.16	820.75	820.33	819.93	819.58	819.22	818.86	818.49	818.29	818.08	817.78	817.47	817.16	816.85
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
G	Beam 3 Lt. Edge	ELEVATION - TOP OF SCREED	821.51	821.10	820.69	820.28	819.87	819.52	819.17	818.81	818.44	818.23	818.03	817.72	817.41	817.10	816.80
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
H	Beam 3 Rt. Edge	ELEVATION - TOP OF SCREED	821.40	820.99	820.58	820.17	819.76	819.41	819.06	818.70	818.33	818.13	817.92	817.62	817.31	817.00	816.70
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
J	Beam 4 Lt. Edge	ELEVATION - TOP OF SCREED	821.28	820.87	820.46	820.05	819.64	819.30	818.95	818.59	818.22	818.01	817.81	817.51	817.20	816.89	816.59
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
K	Beam 4 Rt. Edge	ELEVATION - TOP OF SCREED	821.17	820.76	820.35	819.94	819.54	819.19	818.84	818.48	818.12	817.91	817.71	817.40	817.10	816.79	816.49
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															
L	Rt. Coping	ELEVATION - TOP OF SCREED	821.13	820.72	820.31	819.90	819.50	819.15	818.80	818.44	818.08	817.87	817.67	817.37	817.06	816.76	816.45
		ELEVATION - TOP OF GIRDER															
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED															



**PURPOSE**  
Plan of Screeds Shows Locations of Screeds. "Table of Elevations" Shows Data for Setting Screeds at the Edges of Beams, and Elevations after all the Concrete has been Poured.

**SCREED NOTES**  
1. After the Beams are Set, take Elevations at all the Screed Points on Top of Beams at the Screed Points. Subtract these Elevations from Tabulated Elevations and Use the Resulting Dimensions as the Height for Setting the Screed Above that Point. This Dimension Remains Constant Regardless of how much or in what Order the Concrete is Poured. Do Not Set Screed By Leveling.  
2. No Concrete in the Floor Slab is to be Poured Until the Above Operations are complete.

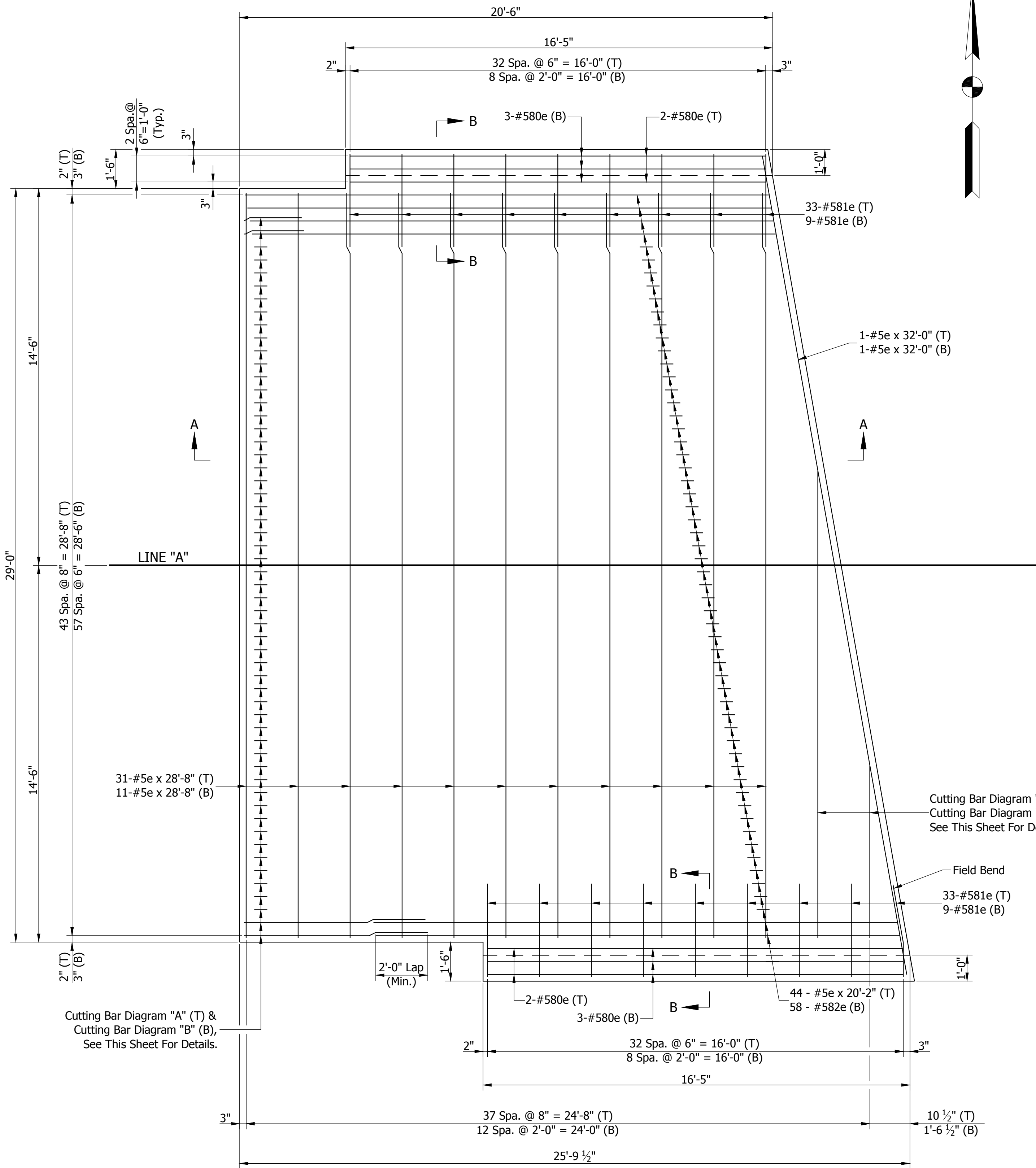
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RECOMMENDED FOR APPROVAL	<i>Mark A. Rennie</i>	03/02/2016
	DESIGN ENGINEER	DATE
DESIGNED: _____	MAR	DRAWN: _____
		VCH
CHECKED: _____	CRF	CHECKED: _____
		MAR

HAMILTON COUNTY HIGHWAY DEPARTMENT	HORIZONTAL SCALE	BRIDGE FILE	
	1/8"=1'-0"	HAMILTON CO. BR. #35	
SCREED SHEET	VERTICAL SCALE	DESIGNATION	
	1/8"=1'-0"	----	
	SURVEY BOOK	SHEETS	
		29	of
	CONTRACT	PROJECT	
	----	PB-14-0012	

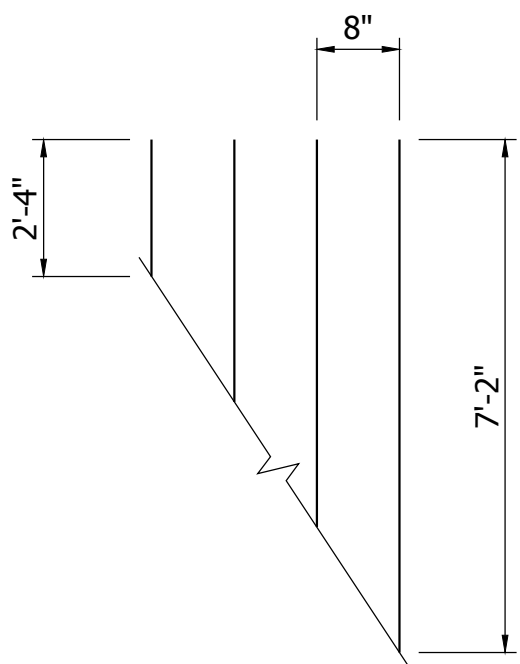
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File: S:\213-0039\bridge\CAD\Plans\rcapp.dwg



WEST R.C. BRIDGE APPROACH  
(EAST R.C. BRIDGE APPROACH SIMILAR)  
(BOTTOM REINFORCEMENT SHOWN)

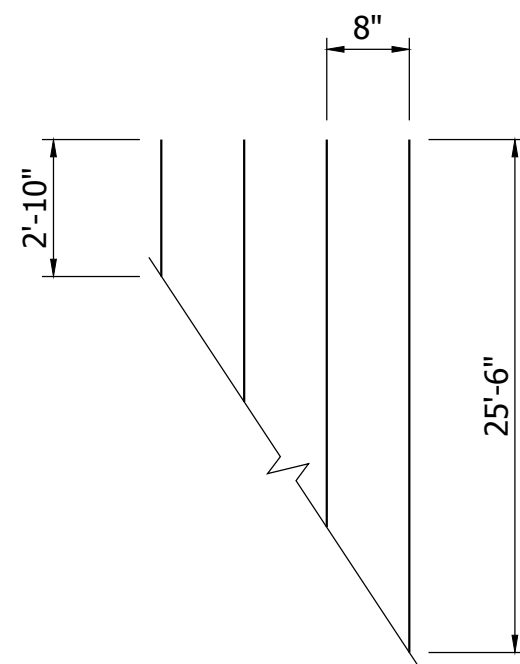
NOTES:

- T - Denotes Top Mat of Reinforcing Steel  
B - Denotes Bottom Mat of Reinforcing Steel



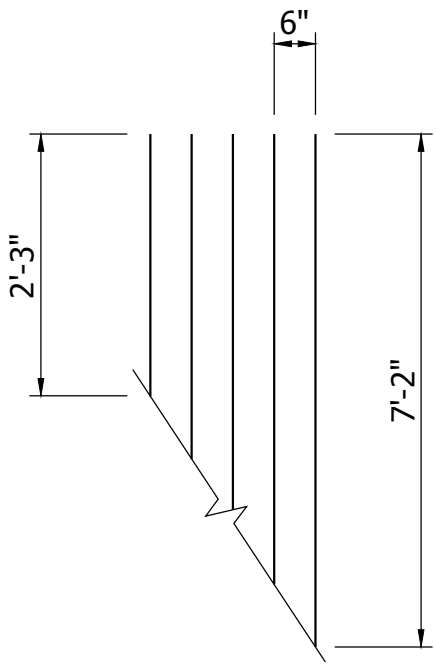
CUTTING BAR DIAGRAM "A"

42 - #5e x 4'-9" (T)  
(Varying in Length)



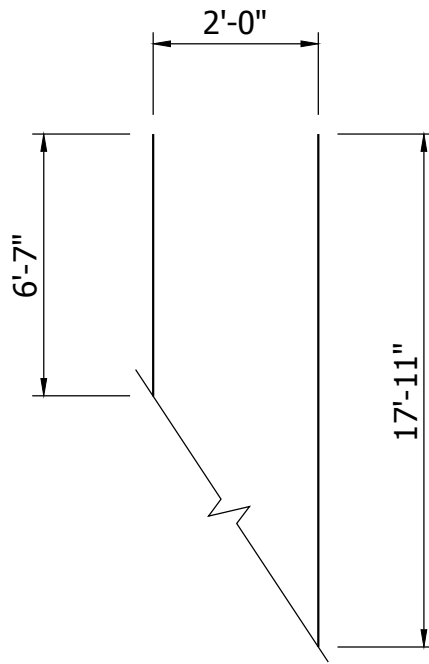
CUTTING BAR DIAGRAM "C"

7 - #5e x 14'-2" (T)  
(Varying in Length)



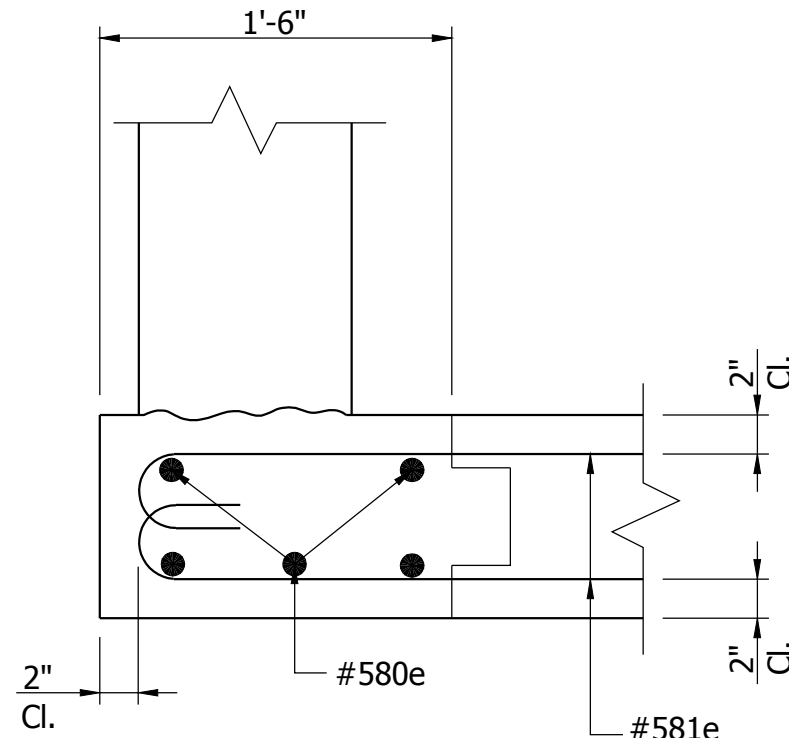
CUTTING BAR DIAGRAM "B"

56 - #5e x 4'-9" (B)  
(Varying in Length)



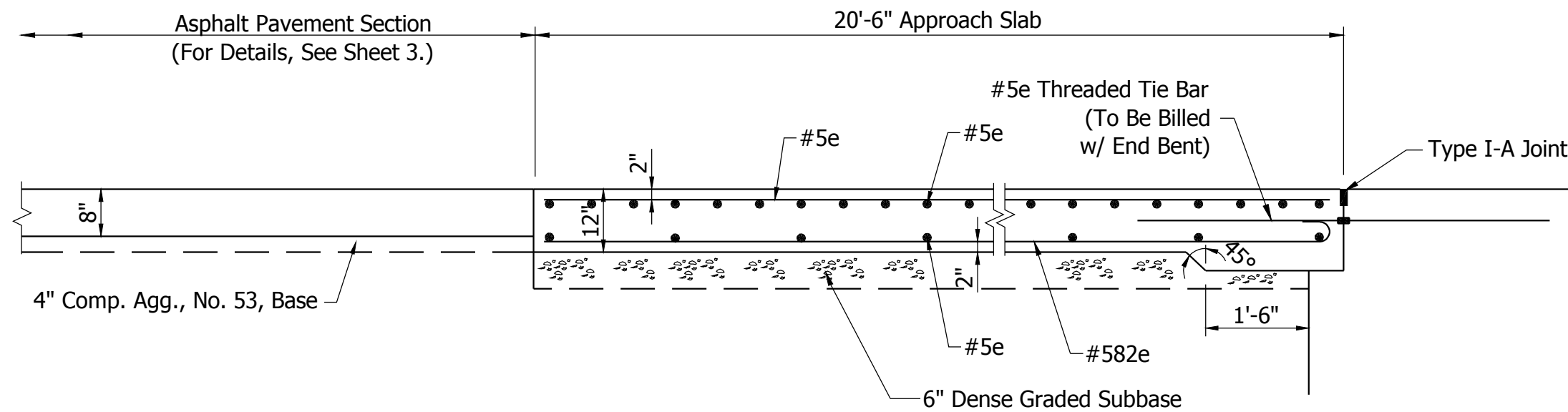
CUTTING BAR DIAGRAM "D"

2 - #5e x 12'-3" (B)  
(Varying in Length)



SECTION B-B

NOT TO SCALE



SECTION A-A

NOT TO SCALE

For Type I-A Joint See Std. Dwg. 609-BRJT-01.

BILL OF MATERIALS			
R.C. BRIDGE APPROACH (2 REQ'D)			
REINFORCING STEEL			
SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (Lbs.)
EPOXY COATED REINFORCING STEEL			
#582e	58	20'-9"	
#581e	84	4'-2"	
#580e	10	16'-7"	
#5e	2	32'-0"	
#5e	42	28'-8"	
#5e	44	20'-2"	
#5e	7	14'-2"	
#5e	2	12'-3"	
#5e	98	4'-9"	
TOTAL #5e BARS:			4656
TOTAL EPOXY COATED REINFORCING:			4656
CONCRETE			
Reinf. Conc. Bridge Appr., 12"			80.0 yd <sup>2</sup>
MISCELLANEOUS			
Dense Graded Subbase			13.0 yd <sup>3</sup>
Surface Seal			695 ft <sup>2</sup>



RECOMMENDED FOR APPROVAL	Mark A. Riehl	03/02/2016	DATE
DESIGNED:	MAR	DRAWN:	VCH
CHECKED:	CRF	CHECKED:	MAR

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

R.C. BRIDGE APPROACH

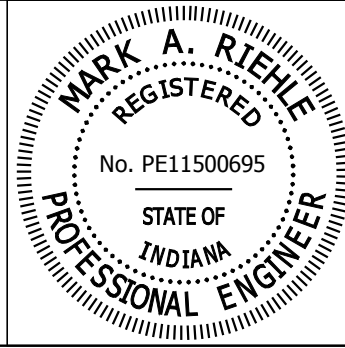
HORIZONTAL SCALE	BRIDGE FILE	
3/8"=1'-0"	HAMILTON CO. BR. #35	
VERTICAL SCALE	DESIGNATION	
3/8"=1'-0"	----	
SURVEY BOOK	SHEETS	
	30	of 34
CONTRACT	PROJECT	
----	PB-14-0012	

## SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE					RAILING, CONCRETE, PF-2	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING, STEEL, PF-2	CONCRETE BRIDGE RAIL TRANSITION, TPF-2	THREADED TIE BAR ASSEMBLY, E.C.	REINF. CONC. BRIDGE APPROACH (12 IN.)	DENSE GRADED SUBBASE	REVETMENT RIPRAP	CLASS 1 RIPRAP	PIPE, END BENT DRAIN, 6 IN.	GEOTEXTILE	AGGREGATE FOR END BENT BACKFILL	PILES						STRUCTURAL STEEL**	CONC. STR. MEMBERS		SURFACE SEAL**	SODDING
	CLASS C		CLASS A	CLASS B															CONCRETE BOX BEAM CB 21"x48"	I BEAM TYPE & SIZE									
	SUPERSTR	SUBSTR	SUBSTR	ABOVE FTG.	IN FTG.																								
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	CYS	CYS	CYS	CYS	TON	TON	LFT	SYS	CYS	LFT	DYNAMIC PILE LOAD TEST EACH	TEST PILE, INDICATOR, PRODUCTION LFT	TEST PILE, INDICATOR, RESTRIKE EACH	PILE SHOE (HP 12x74) EACH	STEEL H PILES, REINF. CONC. ENCASED HP 12x74 LFT	LBS	LFT	SFT	SYS		
BENT #1			18.7				2334						64		46	142	19									9			
BENT #2			15.9			1583												205				5	60						
BENT #3			15.9			1583												255				5	60						
BENT #4			18.3				2328						60		46	133	18									10			
SUPERSTRUCTURE	149.8						44204			64														1681	525		4700		
BARRIER RAIL					12.4		6712	286	4																	930			
R.C. BRIDGE APPROACH							9312				160	26														1390			
TOTALS	149.8		68.8			12.4	3166	64890	286	4	64	160	26	124	92	275	37	460				10	120	1681	525		7020	19	

\*\* Estimated Quantity

EARTHWORK SUMMARY (Cu. Yards)							
TOTAL PROJECT TO BE ONE BALANCE							
Common Excavation:				170	Cu. Yards		
Waste:				95	Cu. Yards		
The Above Quantities Include the Following:							
Line	Cut	Fill Available	Benching	B-Borrow	Fill	Fill + 25%	Benching + 25%
"A"	90	90	100		40	50	125
For RC Bridge Approaches	80						
TOTALS	170	90	100	-	40	50	125
Common Excavation				Fill Available			
Cut	170		Cut		170		
			Benching		100		
					270		
Fill Required				Borrow/Waste			
Fill + 25%	50		Fill Req'd		175		
Benching + 25%	125		Fill Available		270		
	175				(95)		
EXCAVATION, COMMON						170 CYD	
EXCAVATION, WATERWAY						114 CYD	
WASTE						95 CYD	



RECOMMENDED  
FOR APPROVAL

*Mark A. Rando*

03/02/2016

DESIGN ENGINEER

DATE

DESIGNED: TAM

DRAWN: TAM

CHECKED: ACS

CHECKED: ACS

INDIANA  
DEPARTMENT OF TRANSPORTATION

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BRIDGE SUMMARY OF QUANTITIES

HORIZONTAL SCALE	BRIDGE FILE		
NONE	HAMILTON CO. BR. #35		
VERTICAL SCALE	DESIGNATION		
NONE	----		
SURVEY BOOK	SHEETS		
	31	of	34
CONTRACT	PROJECT		
----	PB-14-0012		

SUMMARY OF QUANTITIES AND APPROACH TABLE																																		
LOCATION (STATION)	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	DISTANCE BEYOND R/W LINE	RADII	GRADE (LESS THAN 10% NOT SHOWN)	EXCAVATION		D-1 JOINTS 1" DIA., 15' O.C.	QC/QA PCP 7"	QC/QA PCP 6" OVERLAY	DENSE GRADED SUBBASE	QC/QA HMA, 2, 64			WIDENING WITH HMA TYPE B			ASPHALT FOR TACK COAT	WEDGE & LEVEL TYPE B	COMPACTED AGGREGATE NO. 53, BASE		COMPACTED AGGREGATE NO. 53		SUBGRADE TREATMENT, TYPE IC	JOINT ADHESIVE SURFACE	JOINT ADHESIVE INTERMEDIATE	LIQUID ASPHALT SEALANT	SURFACE BEYOND R/W LINE			MILLING ASPHALT		REMARKS
													SURFACE 9.5mm	INTER 19.0mm	INTER 19.0mm	SURFACE	INTER	BASE																
																													#/SYS	#/SYS	#/SYS			
		"W"	"L"	"R"	1	CYS.	6"	165	220	275	165	275	440																					
		FEET	FEET	FEET	FEET	%	CUT	FILL	LFT	SYS	SYS	CYS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	
MAINLINE																																		
Line "A"																																		
115+93.75 to 117+14.25	Major Collector	Varies	120.50													6.9	11.4	18.3	336.0	32.7	18.4		22.5	18.2	126.7	190.1	190.1	259.6			170.5			
118+94.75 to 120+15.28	Major Collector	Varies	120.53													6.9	11.5	18.4	380.0	53.0	18.5		22.5	22.7	138.8	208.1	208.1	295.7			213.2			
TOTAL																13.8	22.9	36.7	716.0	85.7	36.9		45.0	40.9	265.5	398.2	398.2	555.3			383.7			
PAY TOTAL																	74		716	86	37		86		266	399	399	556			384			

CURB TABLE						
FROM  STATION	TO  STATION	LEFT MEDIAN	RIGHT	CURB, CONCRETE B, MODIFIED	CURB & GUTTER, REMOVE	
				LFT	LFT	
LINE "A"						
116+44.68	117+14.25	X		70		
118+94.75	119+82.31		X	88		
119+07.64	119+82.31		X		75	
TOTAL				158	75	

GUARDRAIL SUMMARY TABLE						
FROM STATION	TO STATION	LEFT	RIGHT	W-BEAM GUARDRAIL 6'-3" POST SPACING	GUARDRAIL END TREATMENT, OS	GUARDRAIL TRANSITION, TGB
EXCLUDES END TREATMENTS				LFT.	EACH	EACH
LINE "A"						
116+43.75	117+25.00		X	56.25	1	1
116+94.70	117+19.70	X		0.00	1	1
118+84.03	119+65.28	X		56.25	1	1
118+89.32	119+14.32		X	0.00	1	1
TOTAL				112.50	4	4

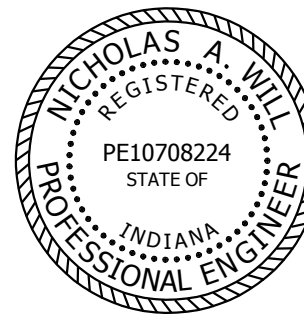
GUARDRAIL REMOVAL					
FROM STATION	TO STATION	LEFT	RIGHT	LENGTH	REMARKS
				LFT.	
LINE "A"					
117+07.18	117+36.29	X		29	
117+08.09	117+41.38		X	33	
118+67.45	119+03.22	X		36	
118+72.53	119+13.74		X	41	
TOTAL				139	

TABLE OF R/W MARKERS				
LOCATION	LINE	OFFSET		NO.
		LEFT	RIGHT	
116+59.00	"A"	30'		1
117+10.00	"A"	30'		1
117+25.00	"A"	40'		1
117+55.00	"A"	30'		1
118+17.00	"A"	30'		1
118+17.00	"A"	40'		1
119+00.00	"A"	40'		1
TOTAL				7

SEEDING TABLE	
Erosion Control Blanket	560 SYS
Mulched Seeding, U	560 SYS
Mob. & Demob. for Seeding	2 Each

BENCH MARK TABLE*		
STATION	LOCATION	BENCH MARK
		1 EACH
TOTAL		1 EACH

\* See Special Provision SP 19, Benchmark for Additional Information.



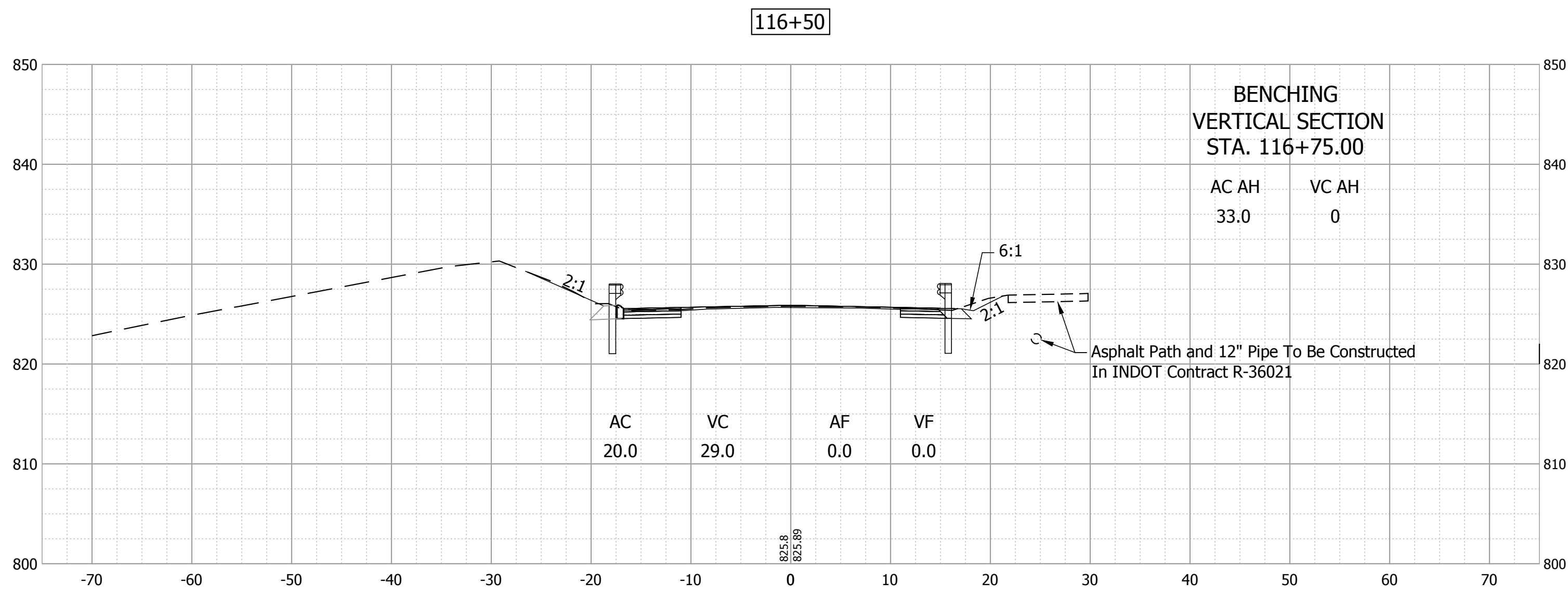
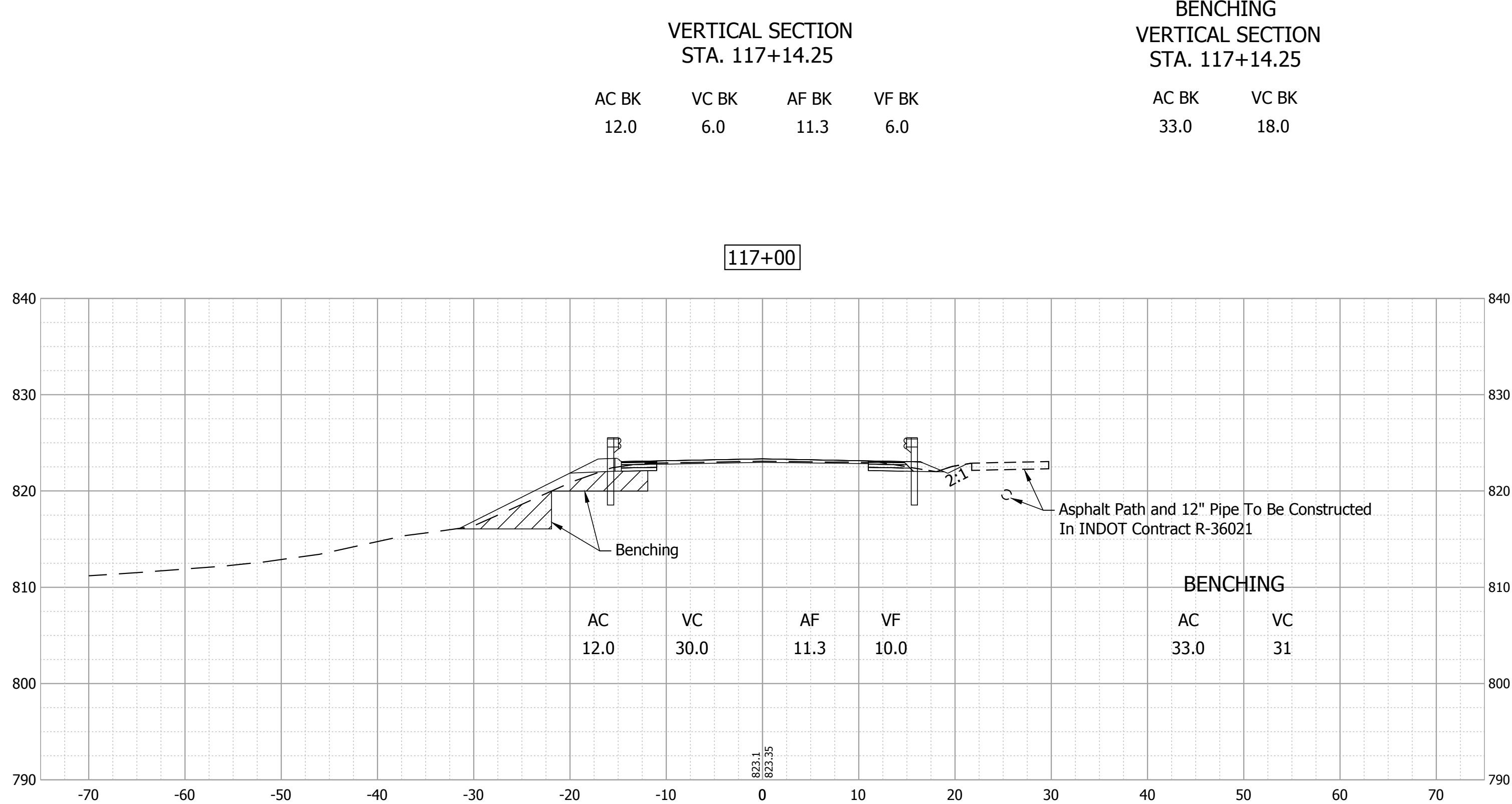
RECOMMENDED FOR APPROVAL	<i>Nicholas A. Will</i> DESIGN ENGINEER	03/02/2016 DATE
DESIGNED: _____	NAW	DRAWN: _____ TAM
CHECKED: _____	CRF	CHECKED: _____ MAR

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

MISCELLANEOUS TABLES

HORIZONTAL SCALE		BRIDGE FILE	
NONE		HAMILTON CO. BR. #35	
VERTICAL SCALE		DESIGNATION	
NONE		----	
SURVEY BOOK		SHEETS	
		32	of 34
CONTRACT		PROJECT	
----		PB-14-0012	

Date: Mar 31, 2016, 8:41am User Name: vaughn  
File: S:\213-0039\road\CAD\Cross Sections\Xsects Final Plans.dwg

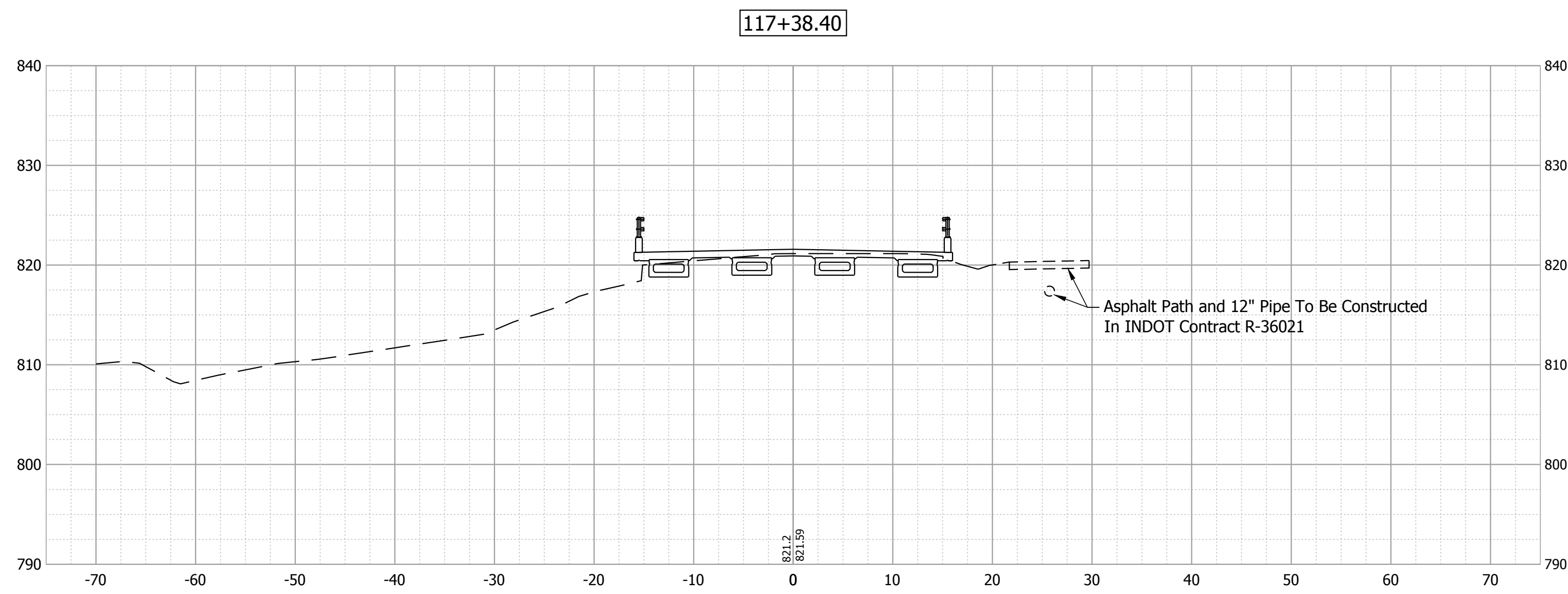
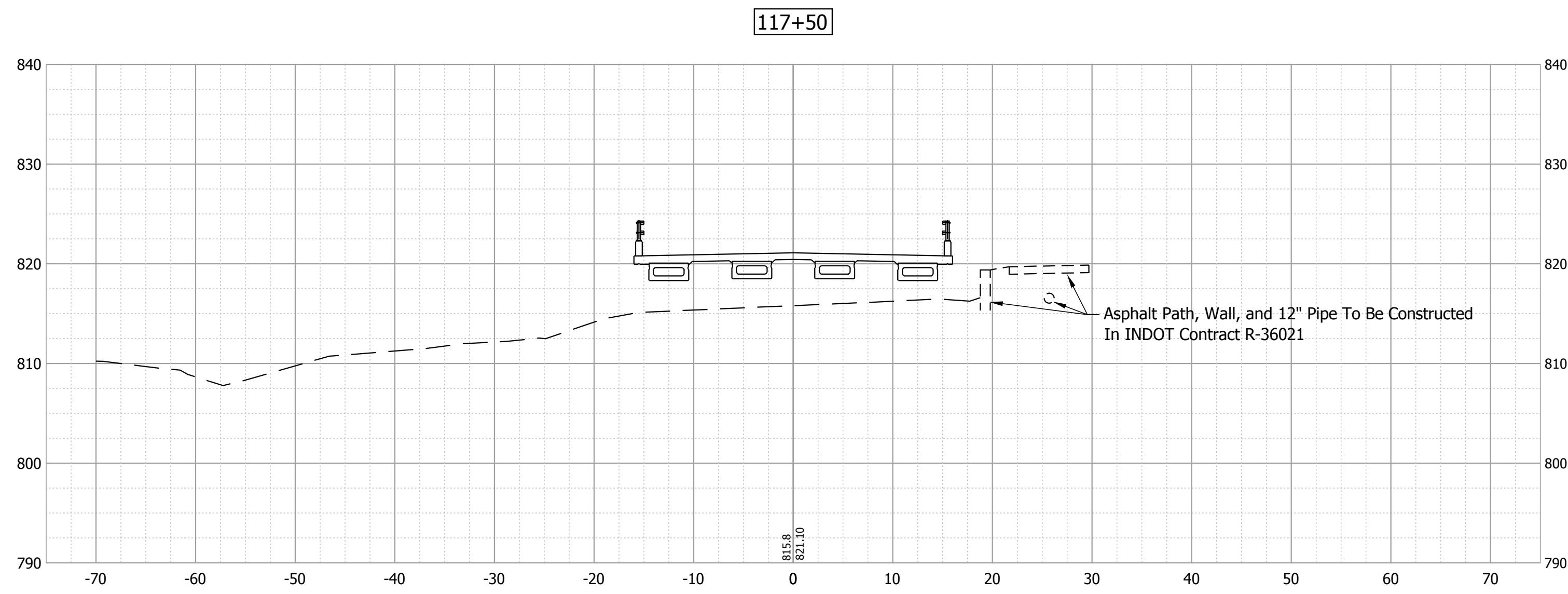
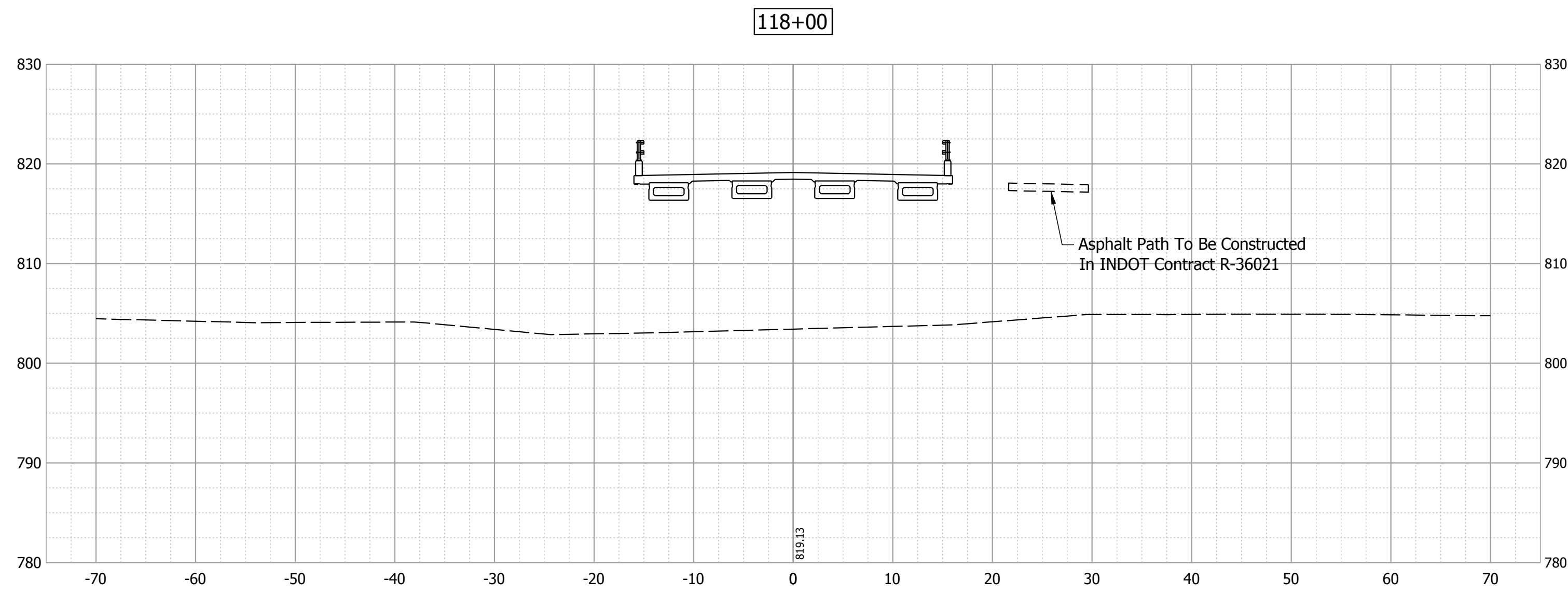


BEGIN INCIDENTAL CONSTRUCTION  
VERTICAL SECTION  
STA. 115+93.75

AC AH	VC AH	AF AH	VF AH
7.4	0.0	0.0	0.0

BENCHING  
VERTICAL SECTION  
STA. 117+14.25

AC BK	VC BK
33.0	18.0



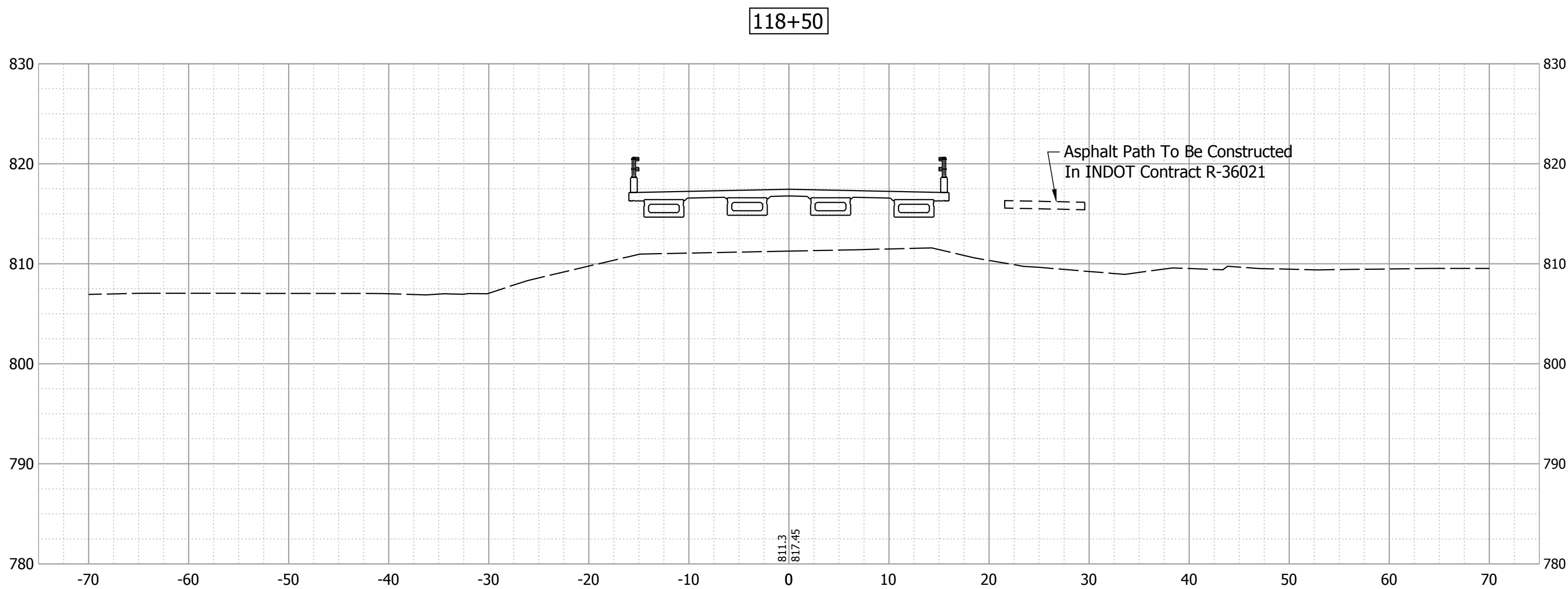
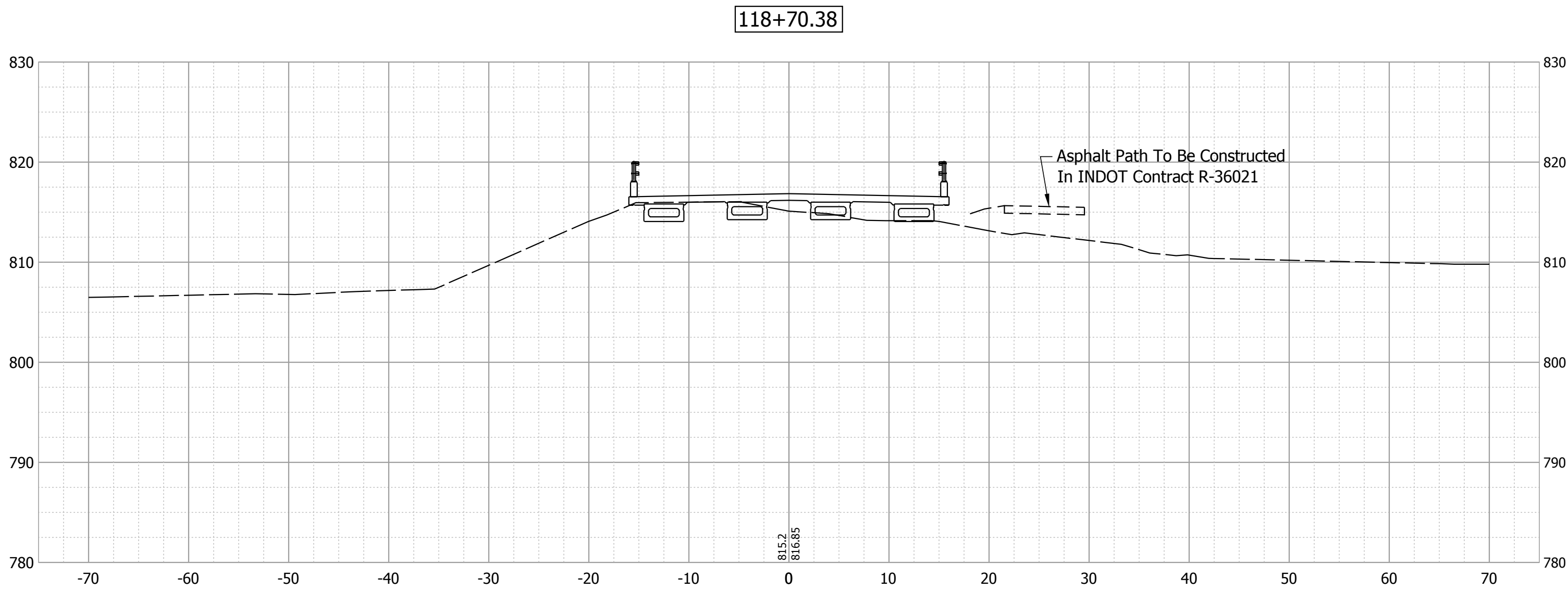
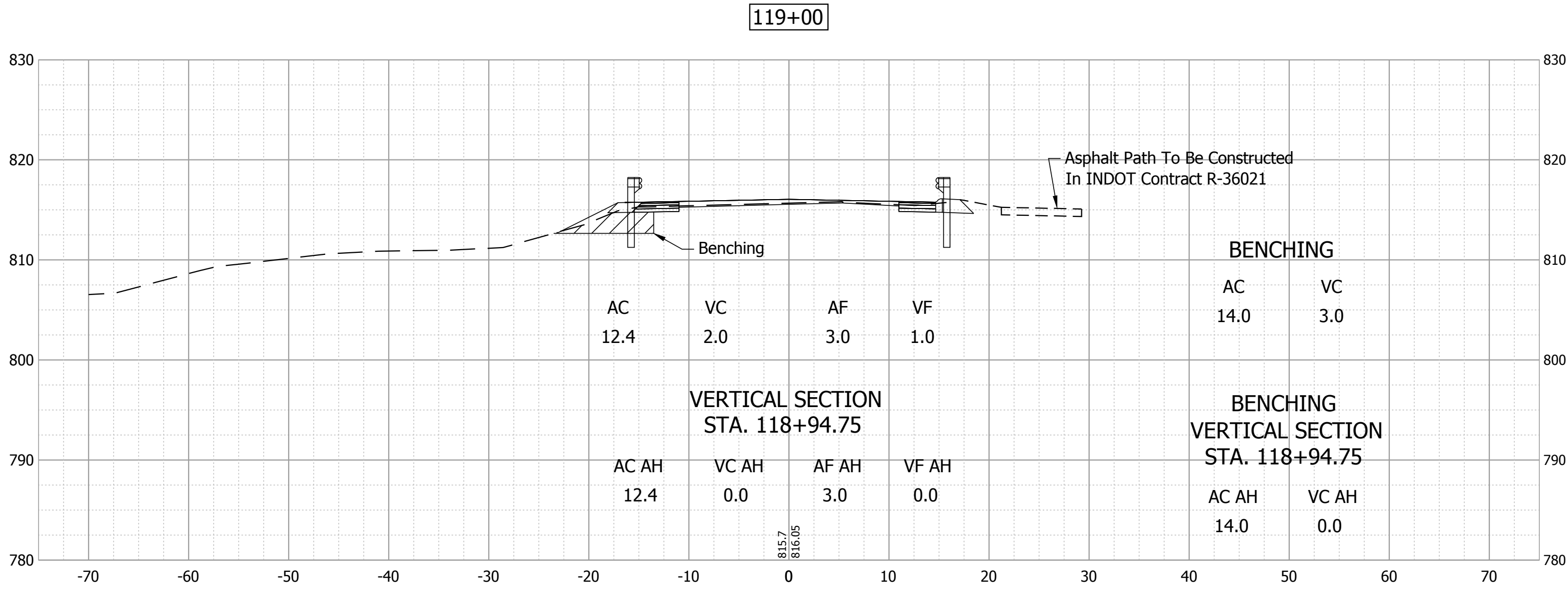
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: LNB	CHECKED: NAW	

HAMILTON COUNTY  
HIGHWAY DEPARTMENT

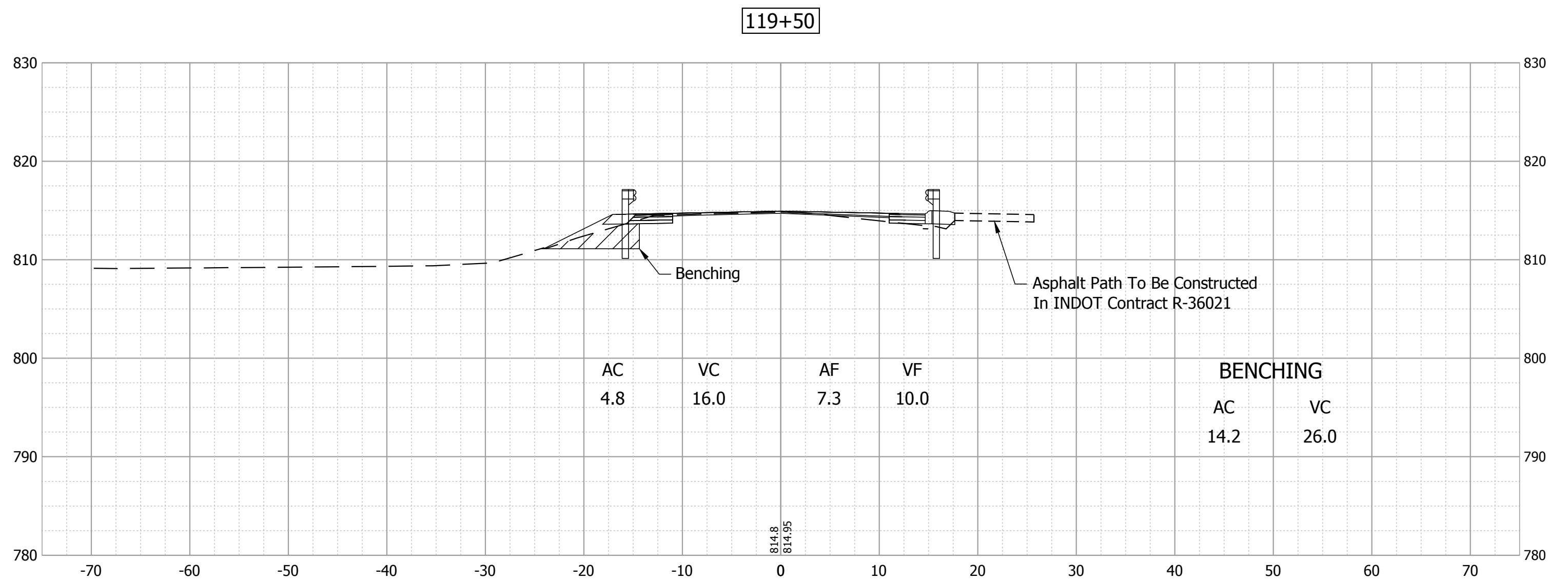
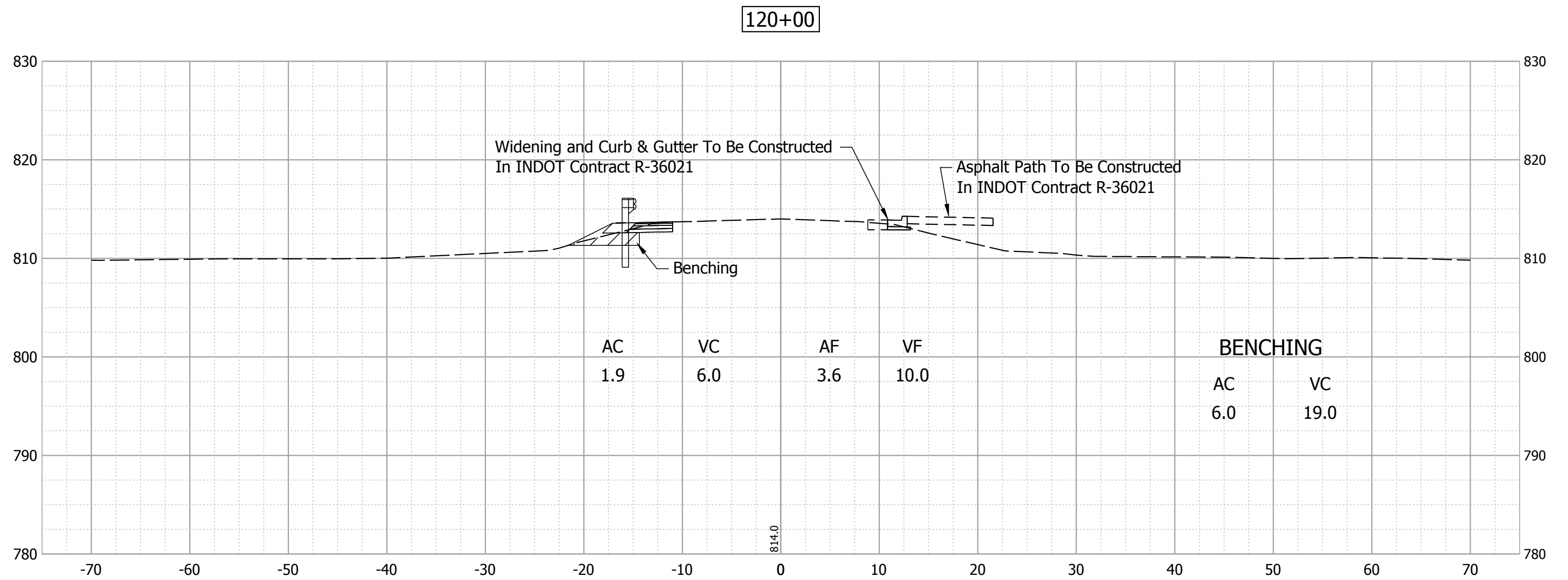
CROSS SECTIONS  
LINE "A"

HORIZONTAL SCALE 1"=10'	BRIDGE FILE HAMILTON CO. BR. #35	
VERTICAL SCALE 1"=10'	DESIGNATION ----	
SURVEY BOOK	SHEETS	
CONTRACT ----	33	of 34
	PROJECT PB-14-0012	

Date: Mar 31, 2016, 8:41am User Name: vaughn  
File: S:\213-0039\road\CAD\Cross Sections\Xeeds Final Plans.dwg



END INCIDENTAL CONSTRUCTION VERTICAL SECTION STA. 120+15.28				BENCHING VERTICAL SECTION STA. 120+15.28	
AC BK	VC BK	AF BK	VF BK	AC BK	VC BK
1.9	1.0	3.6	2.0	6.0	3.0



RECOMMENDED FOR APPROVAL			HAMILTON COUNTY HIGHWAY DEPARTMENT		HORIZONTAL SCALE		BRIDGE FILE		
					1"=10'		HAMILTON CO. BR. #35		
					VERTICAL SCALE		DESIGNATION		
					1"=10'		----		
DESIGNED: _____ NAW		DRAWN: _____ CCW		CROSS SECTIONS LINE "A"		SURVEY BOOK		SHEETS	
						34		of	34
CHECKED: _____ LNB		CHECKED: _____ NAW				CONTRACT		PROJECT	
						----		PB-14-0012	
DESIGN ENGINEER _____		DATE _____							